The RUBBER AGE

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Age
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The RUBBER AGE

VOL. 23, NO. 7 JULY 10, 1928

Machinery Firms Consolidated to Form National Rubber Machinery Co.

Five Leading Manufacturers of Rubber Machinery and Equipment Combine—Economies in Operation and Sales Expected—Stanley W. Harris Named President and Barthold De Mattia, Vice-President

THE long expected consolidation of a number of well-known rubber machinery manufacturers has finally been completed with the issuance of an announcement on July 3 of the incorporation under the laws of Ohio of the National Rubber Machinery Company. The firms involved in the merger are: Akron Rubber Mold & Machine Company, Akron; De Mattia Brothers, Inc., Clifton, N. J.; De Mattia Foundry & Machine Company, Clifton, N. J.; Kuhlke Machine Company, Akron, and Banner Machine Company, Columbiana, O.

Stanley W. Harris, of the Akron Rubber Mold & Machine Company, was named president of the new corporation with Barthold De Mattia, vice-president, and M. D. Kuhlke, treasurer. The board of directors consists of the officers and the following: G. F. Holbach, secretary and treasurer of the Akron Rubber Mold & Machine Company; Peter De Mattia of De Mattia Brothers, Inc.; O. J. Kuhlke of the Kuhlke Machine Company; Elmer T. Coyle and F. H. Grove of the Banner Machine Company of Columbiana; Graham Adams and Frank Haveron of J. A. Sisto & Co., New York; Attorney Stanwood Menken of New York, and Attorney Dudley Maxon of Waters, Andress, Hagelbarger, Wise & Maxon of Akron.

Supply 80% of Industry

The companies entering the merger have been successfully engaged for periods of from twelve to thirty years in manufacturing tire molds, cores, tubing machines, tire curing presses, watch case heaters, molded tube vulcanizers, mechanical goods molds, tire building machines, tire repair equipment, solid tire molds, chucks, power stands, heater presses, etc., and gray iron castings. They furnish equipment to approximately 80 per cent of the rubber trade, including virtually all the large rubber and tire companies in the country.

It was pointed out by Mr. Harris that through the consolidation it is expected that important economies will be effected as a result of reduction of overhead, economy in purchasing equipment and supplies, reallocation on specialized work, elimination of duplications, centralized supervision, joint use of patents, reduction in labor, sales and office personnel and development expense and decreased costs through volume production.

Well Known Executive Heads Machinery Combine

Stanley W. Harris

It is expected that transportation expenses will be greatly reduced, through the location of constituent companies. The De Mattia Brothers Company plants will serve as the eastern branch of the organization, while the Akron and Columbiana concerns will serve as the base for central and western business.

There is a likelihood of the Kuhlke Machine Company plant being transferred within a year to space adjacent to the Akron Rubber Mold & Machine Company building in Akron, but no definite decision has been made on this point at this time. No other physical changes or abandonment of plants is expected to be made.

The combined earnings of the five companies for the past four years averaged $356,454.34 per year. Earnings for 1927 amounted to $426,461.74 and for the first three months of 1928 were $139,423.26. Sales for the four years 1924-1927 were as follows: 1924—$2,010,915; 1925—$2,286,372; 1926—$2,476,788; 1927—$2,707,780. Sales for the first three months of 1928 were $757,702.

Assets Exceed $3,000,000

The balance sheet of the consolidated companies as of March 31, 1928, showed total assets of $3,223,954 of which $2,310,488 was for land, buildings, machinery, equipment, furniture and fixtures. Cash on hand was $140,589 and accounts receivable amounted to $276,174. Other assets included inventories, life insurance policies and marketable securities.

The National Rubber Machinery Company has a capitalization of $1,350,000 in first mortgage convertible 6 per cent bonds and 154,000 shares of no par value common

stock. The bonds will be convertible at the option of the holder into shares of common stock of the company at the ratio of 4 shares for each $100 principal amount of bonds, at the rate of $25 per share, at any time on or before July 1, 1933. Of the authorized common stock, 54,000 shares are reserved for conversion of the bonds and 17,920 shares are in the company treasury.

A public offering has already been made of the total issue of bonds at 99½ and interest and of 35,000 shares of the common stock at $22.75. The stock is listed on the New York Curb market and is offered by E. F. Gillespie & Co., Inc., 111 Broadway, New York City, and Jerome B. Sullivan & Co., 42 Broadway, New York City. J. A. Sisto & Co., 68 Wall street, New York City, are offering the 6 per cent bonds.

The proceeds of the bond issue will be used as part of the purchase price for the properties to be acquired by the consolidated company and the balance for working capital and other corporate purposes.

This merger is expected to prove of advantage to rubber manufacturers for not only will it strengthen the financial position of the machinery company, but it will enable the company to proceed more efficiently on its development work. The consolidated company will hold 62 patents formerly owned by the individual firms, thus bringing under one control many of the basic patents which have in the past been the sources of much litigation between the constituent companies. It is understood that the management of the new company will not pass out of control of those executives who have built up the individual companies over a period of years.

Rubber Institute Completes Organization and Sets to Work

The Corporate Plan and Policies Are Given a Clean Bill of Health by Official Washington—Executive Committee Named From Board of Directors—Offices Leased at 1776 Broadway

WITH only minor changes which serve to clarify and strengthen the document, the "Organization Declaration" of The Rubber Institute, Inc., has been approved and formally accepted as the platform on which the new trade body will serve the rubber industry. As announced at the organization meeting on June 1, when 42 charter members signed the Declaration, the document was not considered as final until it had been taken by the director-general, Gen. Lincoln C. Andrews, to Washington for inspection by appropriate government officials. The Declaration itself stated that its taking effect would depend upon the Department of Justice and the Federal Trade Commission finding no objection to any of its provisions. Such inspection and ratification has now been received, it has been announced at the Institute Offices.

The first principle laid down in the Declaration, which declares for adherence to laws affecting business and competition, stands unchanged.

The second principle deals with avoidance of unfair discrimination between customers. From this statement of principle the following closing sentence has been deleted: "A manufacturer may charge a higher price for special service and/or for superior quality without making such higher price a part of his announced schedule." Except for this deletion the principle is unchanged.

The third principle, which bans secret price concessions, has been clarified through the insertion of words which were already more or less understood and by the deletion at the end of the phrase "and in any event is wasteful, unbusinesslike and damaging to competition."

The three principles upon which the Institute is founded therefore now read as follows, the newly inserted words being shown in italics:

1. Adherence to law, and particularly to those prohibiting the fixing of prices, the allocation of or discrimination between customers, the allocation of territory, and the control of production in restraint of trade.
2. The avoidance of unfair discrimination between customers. To that end, rubber products should be sold only upon prices and terms made by each member acting independently and immediately thereafter publicly announced. No member would be obligated to any other member or to the Institute to continue the use of such prices or terms for any period, but would reserve the right to change them at will, and would announce any departure from the same immediately that it is made.
3. These announced prices and terms should be absolutely net, without any form of secret price concession whatever. A *secret* price concession in any form whatsoever if employed with one customer is discriminatory unless employed with all *like* customers. If thus uniformly employed it amounts to a general price concession which should frankly take the form of a price reduction. Any possible form of a price concession is unethical, except when practiced openly; *and* is discriminatory unless uniformly employed.

With its basic principles approved by Federal officials, or rather, found not objectionable by them, the Institute has been declared ready to proceed and the Executive Committee which will assist the director-general in carrying out the organization's work has accordingly been named as follows. All are directors of the Institute:

E. S. Boyer, American Hard Rubber Company; H. T. Dunn, Fisk Rubber Company; F. C. Hood, Hood Rubber Company; Wm. O'Neil, General Tire & Rubber Company; J. D. Tew, the B. F. Goodrich Company; A. F. Townsend, Manhattan Rubber Mfg. Company; Samuel Woolner, Jr., Kelly-Springfield Tire Company.

This committee held its first meeting immediately following the meeting of the board of directors on June 25th at which the selection was announced. It is contemplated that this smaller group will advise and confer with the director-general more freely than is feasible with the larger group and he will look to them for the more intimate cooperation in putting his policies into effect.

Offices of the Institute have been established at 1776 Broadway, New York City, where the entire twenty-second floor has been leased. Subdivision and furnishing of the new quarters is now under way. The staff is also being gradually built up, a total of six now being employed. Major H. H. White, formerly of the United States Army, has been appointed the secretary and the treasurer of the Institute.

In addition to other matters the Institute is now engaged in the working out of definite program of work which will clarit its duties as compared to the Rubber Association of America. The principal purpose of this effort is to avoid any overlapping or conflict between the two organizations. The Rubber Association is understood to hav made no change as yet in the broad char acter of the work which it has been regu larly handling and will continue to give a tention to any special matters which member companies bring before it.

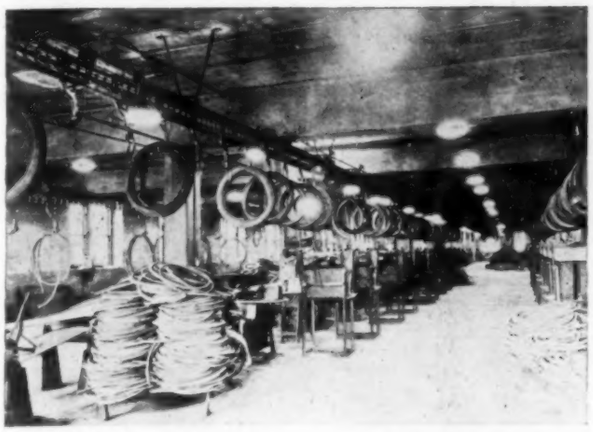
Although the Institute has made no announcement concerning the plan by which its members will contribute to the support of the organization, it is understood that membership fees payable to the Institute will be on the basis of sales rather than on crude rubber consumption as is the case with the Rubber Association.

Elected for Different Terms

At the first meeting of the Institute, the directors were elected for varying terms, three each being selected for from one to five years. Those elected for five years were: H. S. Firestone, A. F. Townsend, and A. B. Cornell; for four years were, H. T. Dunn, F. C. Hood and E .D. Boyer; for three years, P. W. Litchfield, William O'Neil and Thomas Matchett; for two years, C. B. Seger, Samuel Woolner, Jr., and C. D. Garretson; for one year, J. D. Tew, F. A. Seiberling and C. D. Dickey.

It is understood that the first work undertaken by the Institute has been to group the manufacturers in six classes according to the nature of their rubber products,—tires, mechanical goods, footwear, hard rubber, heels and soles, and sundries. A manufacturer in each case has been selected to organize his group for the purpose of conferences to consider the distribution problems and trade practices as affecting his particular class and to decide what rules would serve the best interests of the manufacturers concerned. It is planned to have these conferences recommend to the Executive Committee such rules as are agreed upon and these rules in turn will become the basis for the recognized code of the Institute members.

AUTOMATIC CONVEYORS *for* Scrap Tires *and* Beads *in* Modern Reclaiming Plant



General View of Cutting Room, Showing Hooks Both Latched and Unlatched After Dropping Tires Into Work Baskets

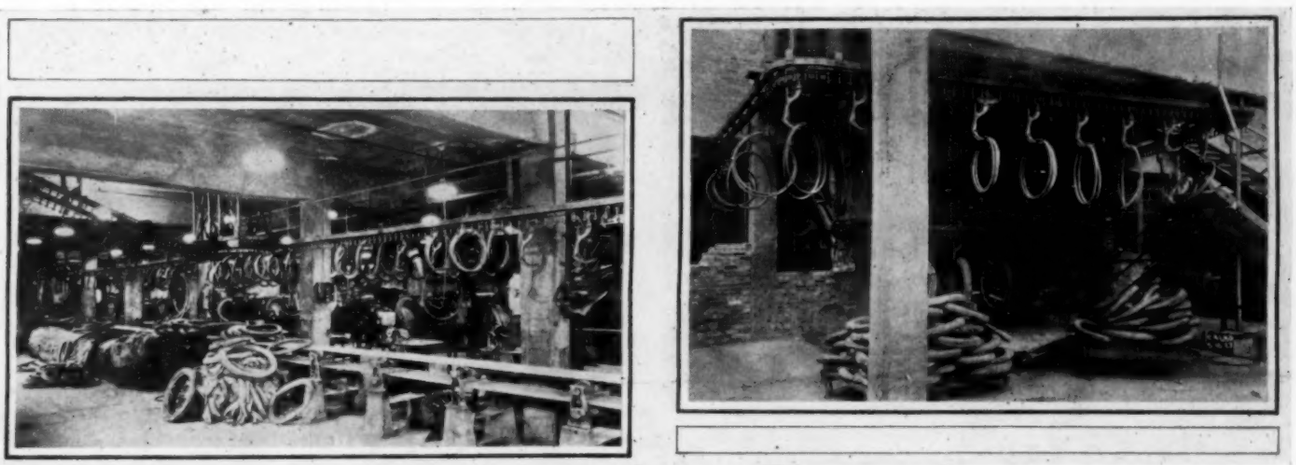
How Automatic Mechanical Handling Speeds Up Salvaging of Old Tires

THE impossibility of economically handling by hand the large number of scrap tires which are brought into the rubber reclaiming plant for de-beading has led one of the large reclaiming plants to install an interesting and effective system of overhead conveyors. This system was recently described in "Mechanical Handling Notes," which is published by Mechanical Handling Systems, Detroit, Michigan.

The primary stages in the reclamation process consist in cutting the beads from the tires and transporting tires and beads from one set of machines to another. The mechanical handling system consists of two overhead chain conveyors, one for in-bound tires, and one for out-bound beads, with two belt conveyors in the cutting room for carrying de-beaded tires. This installation not only performs the ordinary function of conveying, but it also delivers material to each of twenty men at the rate at which each one works to the best advantage, and it completes the cycle by automatically recording the number of tires delivered to each man.

The inbound conveyor carries worn-out tires from a loading station outside of the factory building to the twenty working stations inside of the factory. The outbound conveyor carries the beads cut from these tires at each one of the twenty bead cutting machines to an unloading chute outside of the building. Each of the conveyors runs around an endless, four-sided track hung from the ceiling. It is placed high overhead where clearance is required and dips down within reach of the workmen at loading and unloading stations.

At the loading station, outside, the two conveyors reach one end of the four-sided track. The outbound conveyor,



Automatic Handling of Scrap Tires in Rubber Reclaiming Plant. Monorail and Belt Conveyors Inside the Plant Are Shown at the Left. The Photo on the Right Shows the Loading Station and the Discharge of the Beads. The Lower Conveyor Carries Tires Into the Plant; the Upper Conveyor Brings Beads from the Cutting Machines

carrying beads, travels at the ceiling level, while the inbound conveyor, carrying tires, is depressed to within reaching distance of the yard level. The worn tires are brought to the loading station by industrial tractors carrying lift-skids. The latter are placed near the tire conveyor which is loaded by hand. The bead conveyor has its track loop extended beyond the tire conveyor so as not to interfere with the operation of the latter. Directly under the corner of the loop, immediately before the bead conveyor enters the building, a chute is located for receiving the beads. These hang from the chain hooks in such a manner that in passing over the chute they are automatically released at the proper point. The empty conveyor line then enters the building on the way to the cutting room. The loaded tire conveyor enters at a point below the bead conveyor, rising again later, in the factory.

The most interesting feature of this conveyor is the automatic operation of the carrying hooks by means of which scrap tires are delivered to each of the twenty workmen doing the debeading. Furthermore, the tires are delivered to each workman in exact response to his requirements and a count is automatically kept of the number delivered to him. The unloading mechanism is partly mechanical and partly electrical. Beside each bead-cutting machine is a basket into which a tire falls from the conveyor. As long as there is a tire in the basket its weight breaks an electrical connection so that loaded tire hooks pass the station without interruption. Immediately the workman takes the tire from the basket, however, the basket changes position so that an electrical connection is restored and the next loaded tire hook that comes along will drop a tire into the basket.

This feature which enables a conveyor to serve each workman in accordance with his working needs, may be called the selective method of delivery, to distinguish it from the older types of conveyors used to serve a group of workmen. These older group service conveyors are of necessity speeded to permit the slowest workman in the group to keep in step with procession. The faster workmen in the group are obliged to keep in step with the slower workmen because the conveyor which serves all of them is paced by the slower men.

Tires Are Counted as Delivered

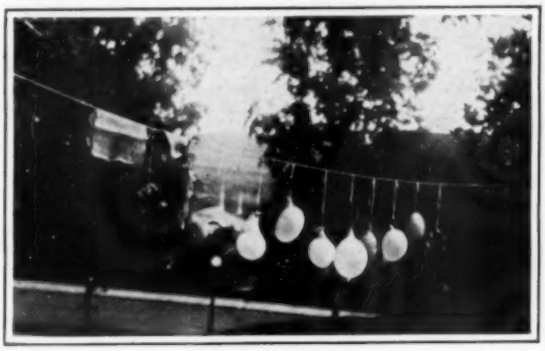
The latch tripping mechanism at each unloading station is connected to a counter which records each tire delivered to that unloading station. This is an unusually valuable feature of this conveyor system because all of the advantages of the individual piece work system of wage payment may be retained. Conveyors ordinarily used for supplying work to a group of workmen and which serve all of them alike regardless of differences in capacity are not adapted to the individual piece work system of payment. This simple and wholly automatic method of recording work done by each man served by a conveyor will add materially to the savings heretofore achieved through the use of conveyors.

Both of these conveyors are driven through variable speed countershafts which provide for a variation in speed of from 40 to 120 feet per minute. This is valuable aid in training men to work in conjunction with a conveyor system because they may be coached individually or in small groups in the sequence and in the timing of the various steps at a very low conveyor speed and as they become proficient, the speed may be increased by small increments.

The normal capacity of the inbound conveyor is 25,000 tires in 10 hours carried into the plant at a speed of 85 to 90 feet per minute and at the same speed the capacity of the outbound conveyor is 50,000 beads cut from these tires and carried out of the plant.

The Emka Process in the Field

THE novel method of drying crude rubber samples shown in the accompanying illustration has been used by J. C. Treadwell, the well-known investigator, in some of his field trips in Central American rubber-producing regions. The method is in reality an adaptation of the Emka process which was described in full in THE RUBBER AGE last year. The sheet of coagulated rubber is folded



once and the edges are crimped to make a bag which is inflated like a balloon and allowed to dry.

The investors of the Emka process have recently brought forward the suggestion that Emka rubber sheets, on account of their size, are ideal for wrapping packages of rubber before shipping. Wrapping "in an equal quality of rubber" is now demanded for the best grades of rubber by the new grade rules adopted by the Rubber Association of America.

New Sealed Box for Inner Tubes

PACKAGING of inner tubes is handled by the various manufacturers in many different ways. In the case of the lower-priced second-quality tubes, one-piece folding cartons with interlocking ends are used. On most first quality tubes, two-piece telescope cartons are employed, which work out very satisfactorily, although they are more expensive.

The International Printing Company of Indianapolis, Ind., has recently brought out a new type of inner tube box which is said to combine the low cost of the folding box and the utility of the telescope box. After the tube is inserted, this carton is sealed at both ends with hot glue on a machine provided for the purpose, thus delivering to the customer a sealed package. To open, the user slits the carton at a designated line on the side and removes the tube.

This has an advertising feature which insures the consumer he is getting a fresh tube, sealed at the factory, and enables the dealer to keep his stock in better shape. For display purposes he can open the carton at the side glue flap, and if he so desires, close it again.

Rubber Division Lists Publications

An idea of the excellent work which is being performed by the Rubber Division of the Department of Commerce, in the dissemination of trade information relative to foreign markets for American rubber goods and news of the crude rubber situation may easily be had from the recent circular of that division, No. 2005, listing the bulletins which have been published and distibuted by the Department during the second quarter of the current year. During the quarter over 100 of such circulars have been made available to the American manufacturers, exporters or interested parties. The titles of these circulars and bulletins show the wide range of subjects treated and include practically every phase of rubber information.

Color and Style as Factors in Selling Rubber Goods

Style, Color and Design Play a Larger Part Today in the Marketing of Rubber Goods Than Ever Before—The Style Department—Price and Utility Alone Are Not Enough to Hold the Field for Rubber

NOT long ago the purchasing department of one of the large rubber companies was commissioned to procure a snakeskin of a specified variety. It required a search of several days among the hide dealers before the desired species was found. The request came not from the production department but from the designing force who wished to copy the pattern for a new calender roll which was to process raincoat fabrics.

Thus we have an example of the new element which is playing a larger part in the merchandising of rubber products than ever before. Rubber readily lends itself to be fashioned into attractive designs either by molding or calendering, and the introduction of organic colors and antioxidants has made it possible to get some very beautiful color effects which are both durable and ornamental.

One of the most significant signs regarding this new trend is that it is arming the rubber industry with a new weapon to combat competition, not so much competition between rubber companies as competition with other industries. We see all round us today evidences of this new competition between industries and commodities. The leather industry, for example, is engaging in national advertising with the slogan "Nothing takes the place of Leather" as its keynote; the lumber industry is similarly organized to combat the trend toward steel shelving, steel office furniture, and brick building; the aluminum producers spend vast sums of money to extol the advantages of this metal over bronze, copper, steel; and bakelite, one of the newest synthetic commodities, is pushing its product to show its advantages over hard rubber, the cheaper synthetic resins and even iron and steel in gears.

Rubber Has Advantage Over Leather

Of course, the elements of first cost and final cost play a large part in determining which product will win out. Just now, rubber is peculiarly equipped to invade the leather market due to an unprecedented shortage of hides and resulting high prices, for which no relief is in sight for some time to come. Unlike rubber, leather is a by-product of the meat industry and the decline in the consumption of meat due to changed eating habits together with the fact that the farmers can use their land to better advantage for farming than grazing are contributing factors.

But price alone will not suffice for rubber to invade this market. Style, utility, and design must be developed to bring the substitute commodity into full play. The United States Rubber Company has been making a line of "leather" bags out of rubber for several years; now "Naugahyde" is being improved with new finishes, new colors, and new designs of the various reptile skins which almost defy the inexperienced eye to distinguish them from real leather. Rubber soles which have been made for years in the conventional colors of black and tan, are now being produced in oak leather color which match perfectly the leather sole. The rubber heel long ago captured its market so that now practically all leather shoes carry this article as original equipment.

Rubber raincoats which for years were made in the conventional black were in danger of losing their market to the oilskin product which capitalized the color trend, until the designers and laboratories got busy, and now we have a beautiful range of colors and designs with special finishes, and the possibilities have not been fully realized by any means. The rubber footwear industry removed some of the weather hazard from its business by the introduction of new types of overshoes which have been unmatched among footwear of all kinds for style, fit, and beauty. Recently the raincoat trade has adopted some of the same fabrics and fashioned them into beautiful coats. Thus next winter we will have coats and overshoes to match on the market.

Branches of the Industry Compete

In following up this trend to beautify and diversify the product, branches of the rubber industry are now competing with one another where formerly no such contacts existed. For example, the Miller Rubber Company for years has been one of the leaders in the manufacture of bright colored rubber goods such as balloons, toys, and novelties. From these beginnings, they have branched out into several types of footwear such as the colored bathing shoe which sells in conjunction with bathing caps and belts, and last year they invaded the rubber overshoe field with the "Shuglov" which is an all-rubber, fancy colored light galosh. This type is in very popular demand right now and practically all the rubber footwear producers are bringing out a similar product.

The foothold was for years a staple article of the regular footwear line. It was sold largely in the cities to women wearing high heel shoes who desired protection during the light rains. It was made the same as the ordinary light rubber, black, varnished, net lined, and with a strap of the same materials. Today this market has been largely captured by the sundry people who make an all-rubber light foothold in color, which is sold with a light, decorated rubber bag, making it convenient for women to carry them in their bag while shopping. Many of these footholds are distributed through drugstores. Proofing companies such as the Vulcan Proofing Company, Brooklyn, N. Y., have entered this field.

Meanwhile the leather shoe industry has not been idle. Overboots for women designed along overshoe lines have been put on the market in various styles and colors. The new "Splash" gaiter put out by the United States Rubber Company is one of latest nifty designs in footwear put out to combat the efforts of the leather shoe designers. This

gaiter comes up to four-buckle height in the back with a flare cuff which makes it low cut in front. Two cross straps are provided which are ornamented with a fancy buckle which snaps in front. Prominent rubber shoe designers regard it as one of the outstanding numbers of the coming season. Alligator and other reptile finishes are also being used in all rubber gaiters in colors. Many rubber footwear companies who are not equipped for this work are being supplied with fabrics coated with embossed designs by the raincoat and proofing manufacturers.

The tennis footwear lines have had a very good season despite the unfavorable weather. Color and style have invaded these lines also in an effort to gain business from the leather industry. Where boys' trimmed tennis were formerly offered in white and brown only, we now have buff, gray, and khaki tops, the latter having a direct appeal to Boy Scouts. Printed and woven designs are being used for tennis more than ever before, especially in misses and children's oxford pumps.

The export market also offers a wide field for the exploitation of color and design in footwear. In England there is a growing demand for a type of light riding boot in tan color with a bright varnish finish. The foreign market is also showing great interest in the various lines of fancy rubber footwear and raincoats. American manufacturers have shown themselves to be ahead of those abroad in producing stylish attractive rubber products and have no difficulty in invading foreign markets.

Tires Improved in Appearance

Even the tire manufacturers are following the style and color trend. Early tires made about 1913 were unsightly in appearance due to the wrapped method of manufacture. Then came the full-molded tire which in many cases was allowed to "bloom out" giving it the sulphur-crystal appearance. With the change to the all-black carbon black tread tire, casings improved in looks to a great extent. But tread designs were not particularly attractive, tending toward too much intricacy of pattern. With the advent of the balloon tire and the flat tread, many improvements have been made.

Two tires which stand out today in the effort to capitalize appearance as an aid to sales are the India and the Mohawk. India tires are made to look distinctive by the addition of a red stripe round the side wall which sets off the black tread to great advantage. Mohawk has a new tread design which employs the sidewall rib like Seiberling but with rounded ribs instead of square. The effect is very notable. Of course, one cannot picture that the color trend will ever invade tires to any great extent. Elements of wear which are imparted by carbon black preclude such a possibility. But sometimes just a little touch of design or a splash of color such as the red sidewall stripe is all that is necessary. Many companies add to the appearance of the casing by inserting a neat molded medallion, others paint their trademark on each tire.

Thus we can readily visualize that one of the best points from which to watch progress in the rubber industry today is from a department which up to a few years ago did not exist—the style department.

Committee D-11 Suggests Changes

AT the annual meeting of the American Society for Testing Materials held at Atlantic City, N. J., June 25-29, Committee D-11 on Rubber Products submitted a number of tentative analysis and specification changes. The committee, of which F. G. Breyer is chairman and E. H. Grafton is secretary, held two meetings during the past year, one in Buffalo in December and the other in Akron in March of this year.

At Atlantic City the committee submitted as tentative new methods of chemical analysis of rubber products to supersede the present standard methods; recommended a revision of the present tentative specifications for insulated wire and cable (30 per cent Hevea rubber); recommended the withdrawal of the present standard specifications for fire hose for private department and public department use, to be superseded by specifications prepared by the sectional committee. Other recommendations covered the withdrawal of the standard specifications for rubber belting for power transmission and the revision of the tentative specifications for rubber insulating tape and of the standard specifications for adhesive tape for general electrical purposes.

British I. R. I. Examination Papers

IN the examinations held on June 15 in London by the Institution of the Rubber Industry to candidates for Associateships of the Institution, the following examination paper was given in general rubber technology. The time allowed was 2½ hours and five questions out of the eight were to be answered. The examiners were H. C. Harrison and R. W. Lunn, both of whom are well known in British rubber circles. Examination papers were also given in rubber science and rubber engineering.

Examination in Rubber Technology

Ques. 1. What is the effect of the following ingredients in rubber compounding:—

(1) 15/17% Crimson Antimony.	(2) Whiting.
(3) French Chalk.	(4) Carbon Gas Black.
(5) Stearic Acid.	(6) Mineral Rubber.
(7) Diphenyl Guanidine.	(8) Ceresin Wax.

Ques. 2. Describe briefly the advantages and disadvantages of the following methods of Vulcanization:—

(1) Open cure.	(2) Press.	(3) Hot Air.
(4) Vapour.	(5) Cold cure.	(6) Oil.

Ques. 3. The following compounds have to be mixed. State the order in which you would add the various ingredients:

90.0 Pale Crepe	55.0 Pale Crepe.
3.0 Sulphur.	5.0 M.R.X.
5.0 Zinc Oxide.	25.0 Carbon Gas Black.
1.0 Accelerator.	2.0 Stearic Acid.
1.0 Antioxidant.	10.0 Zinc Oxide.
100.0	2.0 Sulphur.
	8 Accelerator.
	8 Antioxidant.
	100.0

What do you think the compounds would be suitable for?

Ques. 4. Describe the manufacture of any two of the following articles:—

(1) Motor Inner Tubes.	(2) Delivery Hose.
(3) Rubber Belting.	(4) Solid Tyres.
(5) Rubber Flooring.	(6) Dipped Teats.

Ques. 5. The steam gauge on a vulcanizing pan registers 40 lbs. square inch, but the thermometer only indicates the temperature as 270° F. What do you think is the likely cause of this? How do steam traps if fitted to a pan or press effect vulcanization?

Ques. 6.

(*a*) What is achieved by the mastication of crude rubber?
(*b*) What factors influence mastication?

Ques. 7. Explain the difference between:—

(*a*) A mixing mill and a grinding mill.
(*b*) An extruder used for gas tubing and an extruder used for refining.
(*c*) A vacuum dryer and a Hunter kiln.

Ques. 8. Tiling is to be laid on a floor having an area of 200 square yards. The thickness of the tiling is to be ¼ inch. The design is made up of two colours "A" and "B" in alternating squares of equal size. The compound used to obtain the colour "A" has a S.G. 1.73 and is made up of:—

R. 18.00, F. 60.75, C. 7.50, O. 12.50, S. 1.00, A. O.25.

The compound used to obtain the colour "B" has a S.G. of 1.89 and is made up of:

R. 18.00, F. 59.75, D. 8.50, P. 12.50, S. 1.00, A. 0.25.

Plan the quantities of material required from the beginning of the production to completion of the job.

Window Displays That Aid Sales

Rubber Manufacturers Are Urging Dealers to Make More Effective Use of Windows for Displays—The Personal Appeal and Human Element in Displays Are Taking the Place of Stereotyped Designs

THE display windows of the tire dealer should no more be neglected than the windows of his business associates engaged in merchandising other lines. Display windows have often been called the silent salesmen of the merchant and like any other salesmen they should contribute their share to the success of the business venture.

The tire manufacturer today is using every means possible through salesmen, through house organs, by special bulletins and "dealers' helps" to educate the dealer to a profitable use of his windows. This education is also taking the form of definite suggestions, issued periodically, showing representative displays of simple construction and based on the most accepted principles of modern window decoration.

The window problem of the smaller tire dealer has been to get away from the stereotyped advertising signs, the hackneyed ideas of streams of crepe paper and sunburst of colored ribbon featuring the tire in the center, and to achieve something more intimately appealing, something with a local touch or a display of some startling contrast which will catch and hold the attention.

A necessary factor to be considered in planning window decorations is the cost. Such expense must necessarily be kept down to the minimum and only the ideas involving little or no expenditure is going to appeal to the small dealer. The tire manufacturer in the past has stepped in and carried this expense in a large measure by signs, cardboard display, banners and the like, and today their efforts are all the more active.

Elaborate and expensive displays have been the rule in the windows of the larger manufacturers, in New York especially, but the same artists who have been responsible for these beautiful settings have also worked out many equally attractive but modest displays for the smaller merchant.

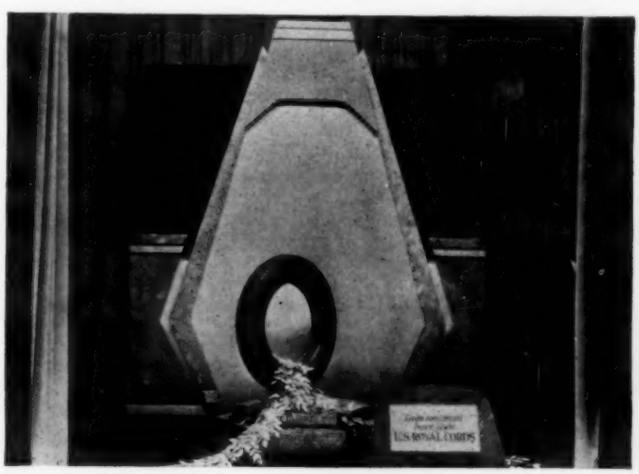
George A. Smith, the director of window displays for the United States Rubber Company, is noted for the wealth of detail and elaborate color arrangement in his designs, but is finding that, especially with the adaptation of the "new art" of square corners, straight lines and block colors, a simple and inexpensive series of striking displays can be made available to the small dealer.

The Personal Appeal and the Human Element can be used Effectively in Window Displays

C. B. De Puy, for many years in charge of the window displays of B. F. Goodrich Company and now head of the displays of the Packard Motor Car Company, has always gone in for less elaborate settings but with the personal appeal as the dominant note. He believes in touching the smaller community with an exhibit of some local significance.

A few examples of the work of these two artists are shown in the accompanying illustrations. They illustrate

A simple but striking effect with trees painted white against a black background



The "New Art" offers many opportunities for startling but inexpensive displays

three distinct ideas and are easily adapted to the window of the small dealer. At the same time, they need not involve any great outlay of money. In the case of the one showing white trees against a black background, the trees were simply the ordinary variety found in the fall or winter in any adjacent woods and painted white. The rest of the construction of the window can be achieved by a box or two and a cut out piece of pasteboard, also painted white.

Another suggestion for the winter months is an imitation fire made of sunken electric light bulbs with red tissue paper to give color and incense to give a smoke effect. This is especially attractive in late afternoons and evenings.

Human Interest Displays

The display with a popular local appeal is, of course, supposed to arouse greatest interest. The example developed by Mr. De Puy shows an enlarged photographic print of some popular youngster or person in a small town actually handling the tire or object displayed. This makes a very personal appeal and is comparatively inexpensive. Around the time of the opening of school or graduation, the local school leaders have a double advertising value.

In the class of displays having a pertinent human appeal the outstanding example is probably the "Time-to-Re-Tire" series of the Fisk Rubber Company. For the small town dealer this appeal could be greatly enhanced by the adaptation of Mr. De Puy's idea of depicting the youngster ready to "re-tire" by an enlarged photographic reproduction of a youth of the town.

In the field of the "new art," which has recently developed and which has been featured so much in advertising copy, the possibilities for effective displays are unlimited.

The "new art" can simply and inexpensively be used to many advantages. A few odd sized packing boxes, a cigar box or two, or beaver boards of various shapes, painted with flat washes or enamel paint will give the desired effects.

Lighting is another important feature but the most inexperienced electrician of any local community already knows the many effects to be obtained by lights and shadows, colored bulbs, indirect lighting or the use of a spot light.

Twelve Rules for Window Dressing

George A. Smith, already mentioned as the man responsible for the windows of the United States Rubber Company, sets down the following twelve rules as the basis of sound window display practice. What he says regarding general merchandise can easily and appropriately apply to the tire and automobile accessory dealer.

1. The store front should have character and make a good appearance.
2. Make the windows all glass, dust-proof and frost-proof.
3. Have your windows well lighted.
4. Plan your windows to overcome reflections.
5. See that windows are cleaned throughout.
6. Change the backgrounds frequently.
7. Do not let window decorations conflict with the merchandise.
8. Have all merchandise thoroughly cleaned before placing in the window.
9. Do not crowd the merchandise.
10. Pose the merchandise in a broken line so it won't look like a row of ninepins.
11. Display accessories in the window. Make tires sell gauges, gauges sell tires. Make related items work for each other.
12. A neat showcard will answer many a customer's unasked question—price tickets on certain goods will sell more goods than a highpriced salesman.

The use of temporary backgrounds is important in the case of the average store. The field of temporary backgrounds includes screens, partitions, "dividers" and other adjuncts to the display as a whole. These need not be expensive and in many cases can be procured by the shrewd dealer on "loan" from the local department store, as in the case of drapes or curtains, or can be made cheaply at the local carpenter shop, as in the case of partitions, etc.

A shallow window especially should have a temporary background which suggests depth, rather than one which emphasizes the fact that the back of the window is only a short distance away from the plate glass front.

The small dealer is apt to lose the opportunities from appropriate displays on holidays or occasions of historical importance. Certain other distinct days of the calendar year can only be too easily neglected. It is not alone good policy to ornament the window appropriately on the Fourth of July, Decoration Day and Washington's Birthday, but such events as Valentine's Day, Hallowe'en, Labor Day, Mother's Day and now Father's Day should not be passed unnoticed. Saint Patrick's Day has its tire sales possibilities a well as the "night before Christmas."

One authority on display decorations calls the showwindow "the silent partner of the business which knows no illness or indisposition but is on the job 24 hours a day, working with and for the dealer to attain the greater results" and only by the measure of its power of suggestion will its mission be fulfilled to the maximum limit.

"One picture is worth a thousand words" runs an ancient Chinese proverb. Modern selling practice has demonstrated that "merchandise well displayed are half sold."

World Gasoline Prices

THE Department of Commerce has recently published a tabulation showing the retail prices for gasoline in various cities of the world as on or about March 31, 1928. In making comparisons it is necessary to take into consideration various factors such as transportation costs, duties, taxes and difference in quality, which tend to make for inequalities in price. It is interesting to note, however, that the automobilist in Buenos Aires is paying 39 cents per gallon while his cousin in Montivideo, a few hours distant, is paying 32 cents. In Bogota he was paying 70 cents while in Nairobi, in the heart of British East Africa, it was costing 64 cents. Rome has been paying 53 cents as compared with 36 cents in Batavia, Java. Strange as it might seem the Porto Ricans pay the least, 16 cents, a lower price in fact than prevails in the continental United States. In the latter case, a price war between the leading companies is responsible for the extremely low figure.

10 YEARS AGO

Items Reprinted from July 10, 1918, issue of THE RUBBER AGE

GOODYEAR TIRE & RUBBER COMPANY announce that they will not only keep their positions open for those who have joined the colors but will pay all such employees the equivalent of one half of their former monthly wages. . . Rubber footwear contractors to the government have entirely discontinued production of heavy goods for the civilian trade in order to rush war goods. . . Lieut. Orlando M. Lord, formerly with Poel & Kelly, crude rubber brokers in New York City, is reported killed while flying at a training camp. . . Rubber Growers' Association in London advise restriction of rubber production in Middle East during 1918-19. . . War Industries Board completes its program of tire standardization and eliminates all but nine standard sizes of tires. . . The plant of the Great Republic Tire & Rubber Manufacturing Company, McAlester, Okla., is completed. . . Prices on manufactured rubber goods are steadily rising and most manufacturers have withdrawn price lists because of the rapidity with which prices are changing. . . Boston Woven Hose and Rubber Company have advanced prices of hose by 25 per cent.

The RUSSIAN Rubber Industry *under the* Soviet Regime

By FEODOR NOVIKOFF

THE rubber industry of Russia before the World War was one of the promising industrial developments in rubber manufacturing throughout the world, but it suffered tremendously during the years of the Revolution and the transitory period following the inauguration and stabilizing of the Soviet regime. Today it is rising from its ashes under a determined leadership which has already brought it to a stage above that existing before the war, a stage that, in spite of gigantic economic handicaps, has already arrived at a production 32 per cent over the output of 1913.

The factories in Moscow and Leningrad are in active operation. The former workers in the rubber companies, rubber chemists and technologists have been reassembled and distributed throughout the various state factories, and since the beginning of the current year a creditable periodical devoted to the rubber trade and containing original articles on the local rubber industry has been published. A great deal of the material for this article has been gleaned from original Russian sources and particularly from the above mentioned Russian *Journal of the Rubber Industry,* and is given to the American public herein for the first time.

Under the economic policy of the Soviet Government, the rubber industry has been resuscitiated to the point of actually commanding a position of prominence among the industries of the Soviet Union. The story of the recuperation of a national industry under a communistic form of government has many interesting features which are in striking contrast to any conditions prevailing under a capitalistic regime.

A short explanation of the underlying principles of Moscow government is, therefore, necessary to a true appreciation of the accomplishments in the reconditioning of this Russian industry.

The present operation and administration of the rubber industry in Russia is under the direct control of the "Resinotrust," or the State Rubber Trust located at Moscow. This is a division of the Supreme Council of National Economy, which in turn is the leading governmental body analogous to a Ministry of Industry, under which the "New Economical Policy" is being worked out. Under the Trust are the four factories which have been taken over by the Government and comprise the nucleus of the industry. Each factory in turn is headed by officers appointed by the Rubber Trust, but who act in concert with a committee which functions something like a board of directors, and which is composed of factory officials and delegates of the workers.

V. V. KUIBISHEV
Who, as Chairman of the Supreme Council of National Economy, Has Much to Do With the Progress of the Russian Rubber Industry

In the rehabilitation of the industry after the Revolution, the government was confronted with the problem of building up an industrial organization, at the same time not violating the basic principles of communism as applied to the workers. It has been a long struggle against almost insurmountable difficulties. Early in 1927, when the plans for resuscitiating the industry had been fairly well completed, a number of commissions were sent to the United States to make a study of the prevailing industrial conditions, with the result that considerable machinery of the American type and American production methods have been incorporated into the present Russian industry. Two representatives of the Trust, V. A. Pokrovsky and P. S. Zackarov, have spent considerable time in Akron and other manufacturing centers and have placed orders for considerable quantities of equipment and supplies. They are still in the United States in this connection. Amtorg, the Soviet purchasing agency in the United States, has been especially active for the last few years, and all purchases for Soviet Russia have been made through them.

According to the Department of Commerce figures, the following are the net imports of crude rubber into Russia during the last eight years:

IMPORTS OF CRUDE RUBBER INTO RUSSIA

	Long Tons		*Long Tons*
1920	62	1924	2,346
1921	165	1925	7,088
1922	2,493	1926	6,529
1923	2,986	1927	12,018

The work of the reconstruction of the rubber industry from the wreckage resulting from the Revolution can be considered as having been completed at the present time. The production in the year 1925-26 was 113% of the production in 1913, the normal pre-war year which has been

taken as a basis for comparison by the Russian Rubber Trust and last year the production reached 132%. The Russian fiscal year begins October 1.

At no time in the history of the industry has the production been sufficient to satisfy the domestic demand and the prime object of the Rubber Trust since the resuscitiation of the industry has been to work out some plan for the gradual increase in production. The question of perspective planning first arose in 1924 and 1925, when the industry was being brought up to the pre-war standard. Since that time several plans for increasing production have been developed but none of them have been fully carried out, due to the fact that they had not been workd out in sufficient detail. The Rubber Trust has now enunciated a definite five-year-plan calling for progressive development in the industry.

First Part of Plan is Finished

This plan was first promulgated in June, 1927. At the present time the first part of the plan is finished, which deals with the steady growth of production for the domestic market and the equal division of production between all of the factories.

A detailed building program has also been evolved not only for enlarging each main factory, but also for branches and retail stores. The following table calling for steady increase in production of various types of rubber goods is the announced plan of the Trust. The first column shows the actual production in 1926-27.

PROGRESSIVE PLAN FOR PRODUCTION OVER FIVE-YEAR-PERIOD

(In 1000 of rubles at current wholesale prices prevailing 1927-28)

Main Groups of Products	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32
1. Footwear, quantity*	29,600	36,500	39,500	43,000	46,500	50,000
Footwear, value ..	91,840	113,150	122,450	133,300	144,015	155,000
2. Tires	11,722	17,645	25,268	31,947	40,544	51,512
3. Mechanical Goods and Specialties ..	31,109	43,906	50,660	57,772	65,682	73,881

*—in thousands of pairs. The ruble is valued at 51 cents, U. S. Currency.

Under the above plan it will be seen that by the progressive growth in output, the industry will soon have more than double its present capacity. According to present prospects, the industry is well equipped to meet the figures called for under the 1928-29 program. Production of footwear for the first half of 1927-28, or the six months ending March 31, was 18,636,000 pairs, an increase of 23.8 per cent over the corresponding period last year.

The main question now before the Trust in connection with the extension of their five-year-plan is the apportionment of the production so that various products can be manufactured with the least duplication in the matter of transportation and distribution. Before the Revolution, each factory, being under private ownership, was producing a variety of products. Now that all the factories belong to the State, it is apparent that some different system of production would be proper and is highly essential.

In other words, each factory should produce but one line of rubber goods to be economical, and in conformity to the best principles of Socialistic industrial management. This process of distributing production represents a rather difficult problem because of the fact that it would hardly be practical to move machinery in its present worn condition from one factory to another, and it is therefore planned to make this change gradual and as new machinery is acquired. With the expected growth and demand for automobile casings and tubes, the Rubber Trust expects to enlarge one of the factories and to put it into tire production exclusively.

The many rubber products of personal use, chiefly of rubber footwear, have shown a considerable increase in production in the first quarter of the present year. This growth is explained in rural sections by the fact that in the past three years the harvest has been good and the peasant, as a result, are fairly well stocked with funds. This fact allowed them to indulge in footwear which they have not hitherto bought. Another factor has been that the peasantry are using rubbers more than ever before for ordinary wear, using them as street shoes and house slippers.

The reason for the growth in demand in the cities is very much the same, and people who never wore rubbers before are buying them now. Before the Revolution, people in the winter wore felt boots and wore rubbers only during the summer rains. Now they are wearing them the year round. The fact that the people are doing most of their traveling in the cities on foot increases the wear and tear on the rubbers and many people are buying two and three pairs a year.

As regards mechanical rubber products, there seems to be also a noticeable growth. The activity of the Rubber Trust stores which specialize in the sale of mechanical rubber products report a normal but steady growth.

The operations under the agreement between the workers and the State for the fiscal year 1927-28 were carried on under unfavorable conditions. These difficulties were due mainly to the mistakes and inequalites contained in the collective bargaining agreement of last year. Workers at different factories did not receive the same average pay, (for instance, workers in the Rubber Trust Factory No. 2 received the minimum pay of the Trust which is 3 rubles per day, whereas workers at the Red Caoutchouc Factory receive 5.28 rubles per day. The average salary for all factories is 3 rubles 95 kopeks per day.) In general, the standard of pay in the rubber industry is very abnormal, especially in view of the fact that the scale of pay is higher than in other branches of industry employing more specialized workers.

In the new year it is planned to equalize the pay in all factories and gradually raise it evenly during the year. The rise in salaries will be possible by the bringing of technical efficiency methods into the factories. This will also tend to lighten the work. A part of the saving in cost of production will be added to the pay of the employees.

Agreement Was Inelastic and Rigid

Another mistake in last year's agreement was that the agreement was so inelastic and rigid that even though mistakes and inequalities cropped up they could not be rectified before the end of the year. This year's agreement has a clause allowing the agreement to be corrected in unforeseen cases. Also, this year the 7-hour day for the rubber industry is to be brought into effect, although the date has not yet been set.

An important feature of this year's agreement is the fact that in spite of the rubber industry now carrying more than its quota of student workers (children of workers who put in 4 hours per day at the factory and are taught the remainder of the day in special classes at the factory on instruction relative to the manufacturing methods, etc., so as to qualify them for skilled workers later. They are paid for their 4 hours work) and owing to the fact that an unusual number of youths are at present seeking work, the Trust has agreed to carry 100 additional boys at the Leningrad factory.

One of the suggestions made for the general resuscitation of the industry is the building of a modern plant for the production of carbon black. In looking over the latest methods used abroad the Russian Trust is inclined toward the American processes. The proposed factory will produce its product under the latest methods, utilizing natural gas, of which Russia has a vast supply.

RUBBER CHEMISTRY and Technology

The Coloring of Cold-Cured Rubber

Organic Accelerators Have Widened Use of Colored Rubber Goods

By W. E. Sanderson, A. I. C.*

DURING the past few years great advances in rubber technology have been made, due chiefly to the use of organic accelerators of vulcanization. This advance has resulted in brighter effects being obtained from the old pigments, but has also appreciably extended the range of colored products, and thus enabled brighter colored rubber to be produced than has hitherto been possible.

The modern demand for bright and lively colors has introduced new difficulties for the rubber manufacturer. He is not in the more fortunate position of the textile colorist, who applies his colors to a practically finished article, but has to make his "mixing" in the case of heat-cured rubber, his "dough" or "solution" in the case of spread or dipped work, and hope for the best during the vulcanizing operation, knowing that it is impossible to modify the resulting color subsequently in any way.

There is little in common between the coloring of textiles and the coloring of rubber. In the former case dyes are applied from an aqueous solution, generally boiling, and the textile material is a network of fine fibres, giving a maximum surface exposed to the dye solution. On the other hand, rubber has an impervious surface, and while a superficial coloring is readily produced by aqueous solutions of suitable dyes, it is quite superficial, and comparatively easily removed. The method is used, however, to some extent for coloring toy balloons and cold-cured goods in general.

The dye solution may contain 1/10 oz. to 1½ ozs. per gallon, according to the dyestuff used and the depth of color required. The solution is heated to 180° F. (or 140° F. for yellow), and the goods stirred well in the hot liquor for about one hour. They are then washed with cold water until all loose dye is removed. Continuous stirring during dyeing, and thorough rinsing after dyeing, are essential to avoid streaky or spotty colors, which easily mark or rub off. The dyed goods are then dried by drumming in a current of warm air or by any other satisfactory method. Drumming with a little sawdust will give improved results by removing color that is not firmly fixed.

Large Variety of Colors Obtainable

A considerable variety of colors can be obtained by this method with a relatively small number of dyes; e. g., violet is produced by mixing 14 parts Rhodamine with 1 part Victoria Blue B; blue with Victoria Blue B alone; green with a mixture of 95 parts Malachite Green and 5 parts Chrysoidine; yellow with Auramine alone; orange with a mixture of 10 parts Chrysoidine and 5 parts Rhodamine; and red with a mixture of 14 parts Rhodamine and 1 part Chrysoidine. These basic dyes are satisfactory for work where vivid colors are required, and the fastness to light is of secondary importance.

Another method of applying these and other water-soluble dyes is to use them in conjunction with an adhesive, e. g., a solution of casein in borax or other alkali, applying the solution to the rubber by dipping, brushing, or spraying. The field of application of this method is very limited, but it is used extensively for toy balloons. When the balloons are turned outside-in the colors are perfectly fast to water and rubbing, and they are also faster to light, as the intervening film of rubber undoubtedly has a protective influence against fading.

Another method of coloring finished rubber goods depends on the use of "oil colors" viz., organic dyes, soluble in benzene or naphtha, with or without the addition of stearic or oleic acid. They are applied by dipping balloons or other articles in a solution of 1 part dye in 400 to 1,000 parts benzene or solvent naphtha, together with about ½ part of stearic acid. After dipping, the solvent is allowed to evaporate, and the color which is left behind is quite fast to water, and of moderate to good fastness to light.

Provided the immersion in the color-naphtha solution lasts only for a few seconds, and the solvent evaporates quickly, the process has no injurious effect on the rubber. Instead of dipping the goods the color solution may be brushed or sprayed on, and the process is extensively used for coloring the edges of rubber crepe soles black, brown, or tan to match or tone with the shoes on which they are fixed.

Wide Range of Available Dyes

The range of dyes available for this process is fairly extensive, and includes Oil Red BN, Spirit Red III., Sudan G, Chrysoidine Base, Oil Yellow Base 80,069, Spirit Yellow I., Spirit Yellow AP, Brown Base PB, Oil Browns 87,417, 87,504, 3,883, 5,096, 13,947; Oil Mahogany 4076, Oil Green O 8360, Oil Green S 8,629, Oil Blacks 6,315, 7,049, 6,137; Oil Blues 8,683 and 7,126; Induline 2B Base, Induline 5B Base, Spirit Induline A, Oil Violet 2B, Oil Violet O 8,653, Oil Blue 2B, Oil Blue VR, and Victoria Blue B Base. (The last two give a brown solution in naphtha or benzene, which changes to blue on the addition of a little stearic acid).

The following free bases of basic dyes are soluble in benzene on addition of 3 to 4 parts oleic or stearic acid to 1 of dye: Oil Red Base, Scarlet Base, Auramine Base, Oil Green A, Malachite Green Base, Methyl Violets 2B and 10B Base, and Nigrosine G and R Base.

As the "oil colors" are soluble in organic solvents which are also solvents for rubber, they can be used for coloring rubber solutions used for "spread" or "dipped" work, subsequently vulcanized by the cold-cure or the dry-heat process. These dyes give transparent solutions, and consequently a pure rubber film colored with them is transparent or translucent, and only shows its true color by transmitted light.

If a dilute solution of a suitable water-soluble dye is added to latex, and then acetic acid is added with constant stirring, the dye is taken up almost completely by the coagulated rubber, which becomes strongly colored. The number of dyes that can be used in this way is very considerable, and includes some of practically all the dye groups—basic, acid, substantive, sulphur, and vat. The following are of special interest:

Basic Dyes—Auramine O, Chrysoidine conc. 88,356, Acridine Orange LP, Indine Blue 2RD, and Safranine T Conc. These withstand a subsequent cold vulcanization very well. In addition Rhodamine, Magenta, Methyl Violet 2B, New Methylene Blue S, Turquoise Blue G, Acronol Brilliant Blue, Brilliant Green Crystals Y, Malachite Green Crystals A, and Bismarch Brown 88.306, also give excellent colors, but are changed to some extent by the sulphur

*This paper was read before a joint meeting of the Society of Dyers and Colourists and the Institution of the Rubber Industry at Manchester, England, December 9, 1927, and has been printed in the official Journal of the first-named group.

chloride cure, and should therefore be tested by the particular cure to be employed before they are used in quantity. When basic dyes are used it is advisable, after adding the dye solution to the latex, to add tannic acid solution equal in amount to about ¼ of the dye used (by weight), before coagulating with acetic acid.

Direct Cotton or Substantive Dyes—These are not of much interest in this connection. They are not as bright and usually not as fast to light as acid dyes, but Chlorazol Fast Orange R and Chlorazol Fast Scarlet 4BS may be mentioned as strong bright dyes for latex which resist the cold-cure process very well.

Acid Dyes—Of these Tartrazine, Acid Orange G, Coomassie Scarlet 9012K, Coomassie Milling Scarlet G, Cardinal Red J, Azo Geranine 2G, Carmoisine WS, Soluble Blue 3M, Alizarin Cyanine Greens, Acid Green G, and Naphthol Green B all withstand the cold-cure very well. Others which are changed to some extent are Coomassie Blue Black, Disulphine Blue A, Crocein Scarlet 3B, Coomassie Navy 2RNX, Coomassie Violet R, Lissamine Violet 2R, and Coomassie Fast Black B.

Generally speaking, acid dyes withstand sulphur chloride vulcanization best, the majority of basic and direct cotton dyes being inferior. Those acid dyes mentioned give strong, bright colors, which have a minimum tendency to bleed off.

Sulphur and Vat Dyes—Sulphur dyes are for the most part quite fast, but dull and weak in comparison with acid dyes. Vat dyes are also very fast, but their tinctorial power is comparatively low, and their high cost rules them out for general use.

Vulcafor Dyes—These are of great interest and utility for coloring latex. They are in paste form, and are particularly applicable by the electro-deposition process, as they are neutral, possess strong coloring power, and are of good fastness to light, water, naphtha, acids, and alkalis. The present range includes Vulcafor Red, Scarlet, Orange, Yellows G and 5G, Green L and Blue. They are organic dyes insoluble in water, and contain no fillers or diluent other than the water in the paste.

Reference has been made already to the use of naphtha-soluble dyes for coloring dipped goods, and to the fact that these dyes give transparent or translucent effects. In order to show their true color value it is essential that the rubber solution should contain a white pigment or that a white background of some kind is provided.

Use of Naphtha Soluble Dyes Limited

Colored rubber articles that are normally seen by transmitted light represent only a very small proportion of the total, so that the field of application of these naphtha soluble dyes is limited. By far the greatest proportion of colored rubber is seen by reflected light, and the most satisfactory method of obtaining the maximum brightness and color value from a soluble dye under these conditions is to make it carry its own reflecting background into the rubber, by converting it into an insoluble colored pigment or absorbing it on China clay, or other inert white filler, and then mixing with the rubber (see T. J. Drakeley, Inst. Rubber Ind. Trans., Vol 2, pg. 42). Dr. Drakeley's tests of these colors were carried out on heat-cured rubber, but many dyes which are changed in color or even destroyed by the heat-cure withstand the cold-cure satisfactorily.

Many commercial insoluble pigments made from water-soluble dyes are perfectly satisfactory for the cold-cure process, and brilliant results, which are quite impossible to produce with inorganic pigments, may be obtained by the use of these organic dye lakes. As a rule, lakes prepared from the acid dyes previously mentioned give very satisfactory results, and are in extensive use for producing colored dipped goods. The essential requirement is that they shall be reasonably fast to mineral acids and dilute alkalis. Fastness to acids is essential on account of the traces of free acid which are almost invariably present during the cold-cure process due to the action of moisture on the sulphur monochloride used, and fastness to alkalis is required to withstand the subsequent neutralizing process used to remove this acid.

In order to be quite sure that the color is capable of withstanding the particular cure to be used, it is advisable to make a preliminary test of the color under rather more drastic conditions than those of normal practice.

With the transparent solutions colored with "oil-soluble" dyes, there is a tendency to mark-off on to adjacent rubber under pressure-contact, or even without pressure with sufficiently long contact, a defect which can be overcome to some extent by the addition of rather more stearic, oleic, or palmitic acid to the solution.

Lakes prepared on an aluminium hydroxide or an aluminium phosphate base have good transparency and brilliance of color. They are manufactured largely for the printing ink and wallpaper trades, and are distinctly more translucent than the ordinary lakes.

"Spread work" is used for a wide variety of rubber-coated fabrics, from cable tapes to hose fabrics, from single texture pure silk raincoats to motor hoods; but there is the greatest variety of work on waterproofs.

The coloring of the rubber for single texture proofings may either be intended to match the color of the cloth or to contrast with it, as, e. g., in check linings. If the rubber and the cloth are intended to match in color, the method employed for reducing the adhesiveness of the rubber film by dusting with starches, farina, talc, etc.; inevitably gives a duller appearance to the colored surface, and the only way of surmounting this difficulty of dulling is the costly one of dyeing the starch to the color of the rubber coating.

Dyes and lakes sufficiently fast for all reasonable requirements, although not as bright as basic dye lakes, include Vulcafor dyes, alizarin lakes, lakes prepared from vat dyes of the anthraquinone series, and lakes of insoluble pigment colors, e. g., Monolite Yellow G, Monolite Fast Scarlet R, Lake Red C, etc. These are more expensive than lakes made from acid or substantive dyes, but have much greater light-fastness.

Grouping of Lake Pigments

Lake pigments may be grouped according to the method of precipitation—

1. Acid dyes precipitated with barium chloride.
2. Basic dyes precipitated with (a) tannic acid and tartar emetic, or with Katanol (a thiophenol) or Tamol (a compound of naphthalene sulphonic acid and formaldehyde); or (b) precipitated with phosphotungstic or phosphomolybdic acid (lakes prepared in this way possess superior fastness to light); or (c) absorbed by green earth.
3. The insoluble azoic dyes.
4. Alizarin dyes precipitated on alumina.
5. The insoluble earth colors.

In a highly concentrated form many pigments do not show their true color; e. g., some yellows are buffs, reds are maroons, blues are blacks, and many basic dyes show a green bronze. It is usual therefore, to preciptiate such dyes on, or with, a substratum which dilutes and diffuses the dye precipitate. This substratum varies according to the purpose for which the lake is required. Barium sulphate is most commonly used, but China clay, Catalpo, White Earth, Green Earth, whiting, and zinc oxide are also used in the preparation of lakes for use in rubber. The proportion of dye in these lakes varies from 1 to 50%, according to the dye used and the degree of intensity required.

When converted into lakes, dyes used for coloring textiles, if fast to the cold-curing process, would be suitable for coloring the proofing. In this way it would be possible to obtained a colored proofing approximating very closely to the cloth on which it is applied. This point might be worth considering in the case of a long run on standard colors, and collaboration between dyers, proofers, and color makers would undoubtedly lead to improved results in this respect.

Contrasting Proofing May Be Transparent

In the case of proofing which contrasts in color with the proofed material, it may be transparent, so that the texture of the material shows through the film of rubber; or it may be opaque and either self-colored or over-printed in a check or other design. A contrasting transparent proofing is difficult, because if naphtha-soluble dyes are used there is always a tendency for them to mark through on to the cloth. The alumina lakes are the most useful for this purpose, although they are not altogether transparent. For opaque contrasting proofings any of the pigment lakes and colors previously mentioned is satisfactory. It is essential that pigments used for overprinting in checks or other designs shall have the maximum opacity if bright effects are desired.

Metallic printings may be produced with plain or colored aluminium powders. The latter are known as Aluminium Bronzes, and are prepared from aluminium powder by mordanting it with tannic acid and a little ferrous ammonium sulphate, washing well and then dyeing at the boil with a basic color. It is essential that the aluminium powder used be free from copper or manganese, as the presence of these metals may give rise to oxidation and perishing

of the rubber. The presence of heavy metals, e. g., copper, manganese, and iron, is well known to be objectionable not only in the proofing but also in the material to be proofed.

A defect possessed by Sulphur Blacks is their tendency to cause tendering of cotton due to the formation of sulphuric acid.

Experience has shown that after-treatment of Sulphur Black dyed cotton with certain metallic salts, particularly copper sulphate, accelerates tendering to a remarkable degree, and that the least traces of heavy metals greatly facilitates the formation of sulphuric acid. Traces of iron in Sulphur Blacks may be accounted for by the fact that commercial sodium sulphides usually contain appreciable quantities of iron, and these sulphides are used in the making of the dyes and in applying them to cotton. After-treatment of the dyed material with tannic acid has been found appreciably to reduce the risk of tendering.

Up to this point the sulphur chloride cold cures have alone been dealt with. Another process of cold vulcanization is the Peachey process. This is based on the interaction of gaseous sulphur dioxide and sulphuretted hydrogen, whereby nascent sulphur is produced in the rubber in a sufficiently active form to effect vulcanization in the cold. Any colors used must be fast to sulphuretted hydrogen and to the bleaching action of sulphur dioxide.

Another method of cold curing which has distinct possibilities from the point of view of producing colored rubber in great variety is the use of the super-accelerators, e. g., Vulcafor VII. (tetraethylthiourea disulphide), Vulcafor VI. (zinc diethyldithiocarbamate), Vulcafor VIII. (diethyl ammonium diethyldithiocarbamate), and Vulcafor IX. (Zinc *iso*-propylxanthate).

The alkyl xanthates are probably the most active of the super-accelerators, but the others mentioned, whilst slower, are quite effective, e. g., a mixing of smoked sheet 100 parts, zinc oxide 10, Vulcafor VIII. 1, Sulphur 3, in benzene or naphtha is not cured at ordinary air temperatures within 24 hours of the evaporation of the solvent, but good vulcanization takes place on longer standing. Almost any mixing will work well if suitable adjustments of the accelerator and sulphur are made, but it must contain zinc oxide to activate the accelerator.

It is of interest to note that benzene and coal-tar naphtha have a distinct activating action on the super-accelerator as compared with petrol or petroleum naphtha.

Finally, a plea is made for closer collaboration betwen the rubber manufacturer and the color maker in the case of straight cold-cured rubber, and between the dyer, the proofer, and the color maker where colored rainproofs or other spread work is concerned. A better mutual understanding of the difficulties and limitations incidental to the various processes would lead to decided improvements, and go far to remove many of the troubles and disputes which so often arise.

Analyzing Barium Sulphate Compounds

AN improved method for use in analyzing rubber compounds and other materials containing barium sulphate (heavy spar) by merely boiling the material with a water solution of soda ash, instead of fusing it with the soda ash, has been developed by the Bureau of Standards, according to an announcement made by the Bureau on June 2. For various reasons, the Bureau states, the fusion method has been found to be inconvenient or objectionable. The new method does not require as high a temperature and can be carried out with a flask of heat-resisting glass.

Huber Testing Laboratory

Service Laboratory for Making Tests With Black, Clays and Rubber Colors Maintained by Well-Known Producer.

JUST as rubber manufacturers have in recent years developed extensive laboratory facilities for testing their rubber products, many of the leading producers of rubber chemicals and compounding materials have inaugurated laboratories for testing their materials, to aid in research and development and to assist those manufacturers requiring special tests or formulae to meet certain requirements. Such laboratories have come to be regarded as a necessary part of the technical services rendered by chemical producers to their customers and as a result no effort is spared to make these service laboratories as modern and complete as possible.

One Corner of the Huber Laboratory Showing Farrel Mill and Working Benches

View Showing Scott Tensile Testing Machine

The illustrations on this page show portions of the laboratory now being maintained by J. M. Huber Company in New York for making the usual physical tests with compounds containing the firm's products—Arrow Black, Suprex Clay and rubber colors. This laboratory contains all the necessary equipment for making tensile, abrasion and ageing tests as well as for color matching and color permanency tests.

Among the apparatus is the following: A latest model Farrel experimental mill with individual motor drive; the Grasselli abrader with special exhaust motor; electric ageing oven with constant temperature control; horizontal vulcanizer; platen press; steam generator with gas boiler for providing steam up to 100 lbs. pressure and a latest model Scott tensile machine. This tester provides for the instantaneous return of the lower clamp after the test sample is broken. It is equipped with the flat plate type of recorder and utilizes the new method of obtaining data points by means of holes burnt through the recording sheet by electric sparks, through which points the stress strain diagram curves are then drawn.

The laboratory is in charge of M. P. Parker.

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EDITORIAL COMMENT

Business as Usual

THIS is the time for political "alarums and excursions." Both of the principal parties have nominated their candidates. One of the two will be elected. Happily, the rubber industry will be safe with the selection of either. While there may be a fund of argument for one as against the other, on the whole the rubber industry, and American industry in general, cannot suffer by reason of the decision made at the polls next November. The fact that this stage has been reached should of itself be a tonic to business. Four years ago there were sighs of relief when Coolidge and Davis had been selected as the candidates to lead the major parties. Business felt safe with the final selection narrowed down to two distinguished citizens whom it trusted.

The same holds true in the present year. Again the principal parties have nominated leaders whom business can safely trust. No plank in either platform threatens the present status of industry. There is, therefore, no reason for perturbation in rubber circles despite the general anxiety attendant upon presidential years.

Indeed, with the selection of the Republican and Democratic candidates we can expect this anxiety to be quickly dispelled. A review of business conditions in presidential years shows that whatever hesitation existed has been overcome before election day. Confidence is restored soon after the conventions are adjourned. This has held true in a majority of the election years during the last half-century.

But business is not as frequently bad or even hesitant in election years as has been commonly supposed. John Moody, the eminent economist, has recently pointed out that in the last 17 presidential elections we have had 11 bull years, 5 bear years and 1 neutral year. Belief in the stability and earning power of American business does not disappear when a president is to be elected. Lacking any sane basis in the first place, any business hesitation cannot last long after the parties have nominated men in whom the entire country has faith.

When an election year does turn out to be a bear year, the cause can usually be traced to fundamental conditions in each of the industries affected. Any pessimism in the rubber industry at the present time ought not be pinned onto the fact that a campaign is on. The industry is in a period of transition from high-priced rubber to low-priced rubber. Such a change will mean losses to many companies. A slow spring has retarded tire sales. Merchandising troubles seem never to be more acute. But none of these things has anything to do with the coming election. They would have happened just the same in any other year.

Industry is justified in complaining about a presidential year when public confidence in the country's welfare is shaken. Then disturbing conditions radiate from every consumer group to the foundations of the biggest industries in the land. Happily, there is no such lack of confidence this year. There wasn't before the conventions—there is none now.

This can and still will be a good year for the rubber industry and those allied with it. More automobiles are being produced than ever before. May and June were record months for tire production. Rubber goods sales are expanding. The licking on the crude rubber inventories has been taken and the companies continue to pay their dividends. Irrespective of the outcome of the campaign, this can and should be made a good year for rubber.

Progress of the Rubber Heel

A RECENT news dispatch from New England brings the announcement of the closing of a factory that has been making leather heels for more than fifty years. When this firm started, the dispatch states, all heels were of leather, for the rubber heel was unknown, the wood heel, though known, was not used, and the fiber heel was not dreamed of. Now a high percentage of the heels for women's shoes are made of wood and rubber, while men's shoes are commonly equipped with rubber heels. Fiber has displaced leather as heel bases on many cheaper lines of shoes.

Although it is not pleasant to contemplate the passing of a company which has served honorably for so long a period, this incident provides another indication of the progress of the rubber heel. Although young in years, the rubber heel has so quickly proved its usefulness that the rubber factory is enabled to prosper while the competitor sees its leadership dwindle and disappear.

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NEWS of the INDUSTRY

Financial—Business
Building Operations
Personals
New Products

GOODRICH PASSES HALF YEAR IN STRONG SHAPE

First Half Year Expected to Show Loss Through Drop in Inventory Values—Second Half Year Expected to Cover Loss and Dividend Needs.

IN line with its customary policy, the B. F. Goodrich Company is expected to write off all its inventories and commitments as of June 30 down to current market levels and, in all probability, will show a loss for the first six months of the year, according to an analysis of the company's financial position recently made by Dow, Jones & Company. Based on current operations, however, and barring any unforeseen developments, Goodrich will earn enough in the second half of the year to make up the entire loss of the first half and also cover the year's preferred and common dividend requirements.

In addition to prospective earnings the company has a reserve of $1,000,000 available for application against any inventory shrinkage, resulting from the break in the crude rubber market and the lowering of prices on finished merchandise. On the other hand, there will be this year an additional dividend requirement of $400,000 due to the issuance of 100,369 new shares to shareholders on rights. A substantial reduction in interest charges has been made, however, through the retirement in January of $5,000,000 of 5 per cent gold bonds and the redemption of 11,880 shares of 7 per cent preferred stock.

Expects to Earn $4 Per Share

Assuming that the company will earn at least $4 a share on the common this year, and taking the company's final net figures for the last three years, without deducting or adding reserves for contingencies, the average net profit on the common for the four years 1925-1928, inclusive, would amount to $10.23 a share.

The balance sheet as of December 31, 1927, showed the company in a strong financial condition. Current assets totaled $71,032,793 against current liabilities of $12,151,846, a ratio of 5.8 to 1. Working capital amounted to $58,880,947, the largest since 1920, and was augmented in January this year by proceeds from the sale of the additional common stock.

The present outstanding capitalization of Goodrich consists of $23,044,500 6½ per cent first mortgage bonds; $5,000,000 of 5 per cent gold notes, due January 15, 1929; $1,028,976 in bonds of foreign subsidiary; $35,096,000 of 7 per cent (par $100) cumulative preferred stock, and 702,585 shares of no-par common.

Resigns From
RUBBER ASSOCIATION

Harvey Willson

RUBBER FLOW STABILATOR ANNOUNCED BY WATSON CO.

The "Rubber Flow" Stabilator, the much heralded new device of the John Warren Watson Company, Philadelphia, Pa., has been introduced to the trade during the past week. The new shock absorber is based on a new principle, the outstanding feature of which is the use of what is claimed to be an entirely novel substance, which has been developed by Watson chemists and technicians and is said to be composed largely of rubber.

This rubber-like substance, unlike friction materials, is said to provide a "flowing" action over polished steel surfaces nor can it grab, stick or freeze to such surfaces. The result is the elimination of any chatter or groans so characteristic of friction.

The claim made for these new stabilators is an 18 to 1 range of holding power within a speed range of 5 to 90 miles per hour. The 18 to 1 characteristic means that the maximum holding power is eighteen times the minimum. The new stabilator will hold 18 times stronger over a six-inch bump than it will over a bump one-third of an inch high. By reason of the nature of the holding material, it is stated, this change from maximum power to minimum takes place not in abrupt steps, but is progressively tapered from one extreme to the other.

WILLSON RESIGNS TO START DEALER PAPER

Assistant General Manager of Rubber Association Organizing Company to Introduce Tire Merchandising Journal of Wide Circulation to Dealers.

HARVEY WILLSON, who has been assistant general manager of the Rubber Association of America, Inc., for the last eight years, has announced his resignation from that organization, effective at once, in order to undertake the organization of the Coverage Publishing Corporation which will introduce a new tire dealer paper of wide circulation. Associated with him in the new company will be P. L. Palmerton, publisher of THE RUBBER AGE, and others connected with the Palmerton Publishing Company.

Details of the new journal for tire dealers have not yet been announced by Mr. Willson. It has been learned, however, that the paper probably will be known as *Tire Topics* and that it will be published monthly. It will start with a controlled circulation of between 40,000 and 50,000 copies, covering all the better rated tire dealers in the United States. Editorial emphasis will be on tire merchandising. Tire and auto accessories, vulcanizing, etc., will be treated as important adjuncts to the tire dealer's business.

Mr. Willson's long service with the Rubber Association has given him an unusual grasp of the problems of rubber goods merchandising, particularly of tires. In connection with his work in the tire and service divisions he has had a part in working out every major question of tire distribution that has arisen in the last several years. He is widely known both among manufacturers and dealers.

A complete announcement concerning the new publication will be made within the next few days.

H. M. HENDERSON JOINS HARRISS, IRBY & VOSE

Harriss, Irby & Vose, of New York, and prominent in crude rubber brokerage circles, have recently announced the appointment of H. M. Henderson as manager of their rubber department. Mr. Henderson, who is also well-known throughout the rubber trade, began his connection with rubber in 1906 when he joined the firm of Robinson & Tallman. Later he was associated with F. R. Henderson, now president of the Rubber Exchange of New York, and for several years was in the London office of Henderson, Forbes & Co., Ltd. He has lately been connected with Henderson Bros. & Co., until the recent liquidation of the firm.

FIRESTONE CO. SUED FOR PATENT INFRINGEMENT

A suit alleging patent infringements has been brought by the United States Rubber Company and B. F. Goodrich Company in the Federal Court of Cleveland, O., against the Firestone Tire & Rubber Company. The plaintiffs assert that four of their patents on tire building machines have been used illegally by the Firestone company for about a year and an accounting of profits from the use of the machines is asked.

According to the suit, the four patents originally were issued to Archer H. Harris on November 13, 1915; Ernest Hopkinson, April 12, 1921; John R. Gammeter, January 15, 1924, and Adrian O. Abbott, September 9, 1924.

In connection with the suit, officials of the B. F. Goodrich Company issued the following statement:

"The B. F. Goodrich Company, together with the United States Rubber Company, are owners of certain patents on tire-building. They are of the opinion that the Firestone Tire & Rubber Company is infringing on certain of these patents and it has become necesary to file suit to suppress these infringements. This suit relates to the building of tires by the so-called flat-band building and vacuum expansion methods."

TOY BALLOON MAKERS DROP ASSOCIATION PLAN

Efforts to organize a separate trade association among the toy balloon manufacturers appear to have failed. At a meeting in Ashland early in June several of the best-known balloon companies failed to send representatives and as a result a definite organization was postponed. The movement among the balloon makers was fostered by C. M. White, a crude rubber broker of Akron, and at one time it appeared that he would be able to gain the interest and support of a sufficient number of companies to make the project feasible. When the time for the definite step came, however, several companies failed to give their support.

It is reported that as an alternate scheme the balloon manufacturers will consider joining the Rubber Institute and attempting under such auspices to work out a program of benefit to all. Competitive conditions in the toy balloon industry have been severe.

New Tire Company

The Elk Rubber Company, of Akron, O., was recently incorporated under the laws of the state of Ohio, with a capital of $10,000. The company's offices will be 204 S. Main Street. It is understood that the concern will shortly begin handling a new tire.

Lambertville Rubber Revived

Plans have now been completed by the new Lambertville Rubber Company, which will take over the Lambertville, N. J., property of the old concern of the same name, which was a subsidiary of the Goodyear Rubber Company of Middletown, Conn. The leading spirit in the new organization is Charles C. Alexander, formerly director of sales of the old organization. No details of the transfer of the factory property or of the financial backing of the new organization have been made public, but it is understood that the project is well financed and that the promotors are for the most part local Lambertville men.

Nahm Joins Naugatuck

Announcement has been made of the appointment of E. H. Nahm to the sales organization of the Naugatuck Chemical Company, effective June 15. Mr. Nahm will cover Ohio, northern Pennsylvania and western

E. H. Nahm

New York territory, which until recently was handled by H. O. Newman, who is now transferred to the company's factory at Naugatuck to take charge of the rubber testing laboratory.

For the past four and a half years Mr. Nahm has been in the sales promotion and service department of the Roessler & Hasslacher Chemical Company, in the Ohio and mid-west territory.

SAN FRANCISCO MAY GET SEIBERLING COAST PLANT

It is rumored that the Seiberling Rubber Company, of Akron, O., will be the next large rubber manufacturing company to establish a plant on the west coast. F. A. Seiberling, president of the company, is reported to have spent some time recently in San Francisco with M. H. Anderson, San Francisco manager of the company, looking over the possibilities and conferring with local business men. Officials of the local chamber of commerce took him on a trip about the city and pointed out various available factory sites. While in the west, Mr. Seiberling also visited Portland and Seattle.

Miller Has 36th Anniversary

In celebrating its 36th anniversary on June 28 the Miller Rubber Company announced that it had produced its eighteenth million tire, one of the new 32 x 6 de luxe balloons. The company was founded in 1892 and the first products turned out were surgeon's rubber gloves. Since then it is estimated that over 3,000,000,000 rubber articles have been manufactured at the company's plant. Jacob Pfeiffer was elected president of the concern at its founding and has held office ever since.

GOODYEAR EXPERIMENTS WITH GUAYULE IN ARIZONA

The Goodyear Tire & Rubber Company has been carrying on experiments during the last year with the cultivation of guayule on the Litchfield Plantation in Arizona, one of the three large units operated by Goodyear in the growing of cotton for tire fabrics. Six acres have been set aside for experiments and four different varieties have been planted. Each variety is given three different extremes of irrigation. On one tract the shrubs are irrigated only once a year, in March. On another irrigation is continued from February to June and shut off during the rest of the year. On the third tract irrigation is continued until the end of August. The chief purpose of the experiments is to determine just how much moisture should be given in order to secure the greatest amount of rubber. The seeds having been set out in the spring of 1927 the shrubs are now in their second year.

AKRON UNIVERSITY PLANS A RUBBER RESEARCH UNIT

Plans for the enlargement of the University of Akron call for the erection of a rubber research laboratory, according to an announcement by Dr. George F. Zook, president of the institution, to the Cleveland alumni, who are assisting in the drive for $2,000,000, representing the cost of the new unit proposed. For several years each of the larger rubber manufacturing companies in Akron have maintained a fellowship in rubber chemistry in the general chemistry work of the college but this is the first step the university has made to bring rubber research work into a position of greater prominence in the curriculum of the institution.

Shoe Findings Plant Closes

The R. D. Mason Company, of Pawtucket, R. I., one of the oldest plants in the United States engaged in dyeing, bleaching and mercerizing of cotton cloth, is reported to be permanently closing its doors. Although a definite date has not been announced it has been stated that no new orders will be accepted. The company has been furnishing shoe linings to the rubber footwear trade for many years. It was established in 1805. It is said that the company is in excellent financial condition but that conditions in the industry no longer justify keping the plant in operation.

The Hood Rubber Company recently declared its regular quarterly dividends of $1.87 on the 7½ per cent preferred stock and $1.75 on the 7 per cent preferred, both payable August 2 to stockholders of record July 20.

CATALPO!

ANODE PROCESS STILL IN LABORATORY STAGE

Commercial Production of Rubber Goods by Electro-deposition Not Yet Here, Goodrich Says—Rome Wire Company Licensed by American Anode Company.

NEWSPAPER announcements that the B. F. Goodrich Company is now ready to begin the commercial production of rubber goods by the electro-deposition process have been branded as misleading and premature by officials of the company. Progress has been made with the electro-deposition experiments, it is conceded, but there is no commercial production at the present moment and neither is the company ready to undertake such production at this time. At least a few months more will be needed, it was said, before everything is ready.

When Goodrich has completed its experiments and is ready for commercial production, the company will operate under license from the American Anode Company, which holds the patents covering the process. All of the stock of the American Anode Company is owned by Goodrich, the Eastman Kodak Company of Rochester, N. Y., and the Anode Rubber Company of England. It is understood that these owners hold approximately equal shares. The American Anode Company has offices at Akron in the Akron Savings & Loan Building. The experiments underway at Goodrich are really on behalf of American Anode instead of Goodrich alone.

Officers of the New Company

Officers of the American Anode Company are: Chairman of the board of directors, D. M. Goodrich, chairman of the board of Goodrich; president, Dr. Julius Klein, vice-chairman of the Hungarian Credit Bank; treasurer, F. W. Lovejoy, vice-president of the Eastman Kodak Company; secretary, S. M. Jett, secretary of the B. F. Goodrich Company; general manager, R. W. Albright; directors, Howard M. Sachs, of Goldman, Sachs & Co.; W. B. Stuber, president of the Eastman Kodak Co., and T. G. Graham, first vice-president of Goodrich.

Rights to use the process in the production of insulated wire have been acquired from the American Anode Company by the Rome Wire Company, it was reported recently. Goodrich does not manufacture insulated wire. The Rome Wire Company is now a part of the General Cable Company and has ample facilities to capitalize fully on the process should it prove to be especially valuable in the manufacture of rubber covered wires. It is expected that Goodrich will use the process ultimately for the production of general rubber goods such as inner tubes, bathing caps, gloves, balloons and other lines which are now made of rubber on forms. Goods which are now dipped would fit the new process. Since by the electro-deposition process such goods would be made directly from the latex, it is claimed that the articles would have superior wearing qualities.

The electro-deposition has previously been described in detail in THE RUBBER AGE. Briefly, an electrical current is passed through a container of fresh rubber latex to which may have been added coloring agents, fillers, etc. The container acts as the cathode from which the current passes to the anode. The latter is the form which is to be coated with rubber. The particles of rubber and other ingredients in the latex travel with the current to be deposited on the anode. When the latter is coated to a satisfactory depth, it is removed, dried and sent through a vulcanizing process, after which the article is stripped from the form, if desired.

It is expected that the process will be especially valuable in coating metals with rubber in order to make them acid-resisting. In such cases, of course, the rubber would not be disturbed after vulcanization. Experiments are also being made in the coating of fabrics with rubber. The fabric would be fitted over the form before deposition was begun.

Well-Known Importer Sails on His 56th Voyage

Julius Schmid, president of Julius Schmid, Inc., New York, well-known manufacturers and importers of rubber goods, on board the S.S. Columbus in company with the German aviators. Mr. Schmid sailed on his 56th voyage to Europe on June 9th. From left to right are: Maj. James Fitzmaurice, Mrs. Fitzmaurice, Patricia Fitzmaurice, Julius Schmid, Mrs. Koehl, Baron von Huenefeld, J. T. O'Connell, secretary and general manager of Julius Schmid, Inc., and Capt. Hermann Koehl

Goodyear Builds Branches

Completion of new branch buildings in three important tire distributing centers, Portland, Me., Syracuse, N. Y., and Davenport, Iowa, has been announced by officials of the Goodyear Tire & Rubber Company. Each of the new buildings has adequate storage and shipping facilities and large windows for display purposes.

The cut of from 4 to 17 per cent in tires and tubes by the Trenton rubber manufacturers is expected to stimulate the buying of casings during the early summer. Mechanical rubber production is normal at most of the plants, while some are operating overtime. The Puritan Rubber Company and the Pierce-Roberts Rubber Company are operating with two shifts. Hard rubber production shows some improvement.

INNER TUBE MADE FROM LATEX IS INTRODUCED

An inner tube made from natural rubber latex has been put into production by the United States Rubber Company and introduced to American motorists by means of advertisements in national media. It is claimed that the new tube, which has been given the name "Royal Ustex," will outlast the best automobile casings and will wear longer than any other tube now available.

Since the tube is made directly from latex, the rubber is said to be grainless and to have a tearing point many times higher than that of the best tubes made of milled rubber. The first advertisements of the tube have been built around efforts made by a trained athlete to tear the Ustex tube, either from a nicked edge or from a slit. In another impressive test the tube has been "ballooned" to a diameter of several feet.

The new tube is constructed in circular shape so that it will fit the casing without deformation. Other details of the manufacturing process have not yet been disclosed. The tube will be available at first in 30x4.50 and 29x5.00 sizes.

Florida Plant Building

According to the new plans of the Gould Tire & Rubber Company, the formation of which was reported in THE RUBBER AGE of May 25, the plant will be constructed at Tampashores, Fla., instead of Tampa, as first contemplated. The company, which will be the first concern of its kind in Florida, will manufacture tires and tubes and expects to be in operation by October. The plant and equipment will represent an expenditure of $250,000.

Names in the News

FREDERICK R. SAYER, secretary of the Mercer Rubber Company, Trenton, N. J., will sail shortly for a lengthy trip through France, Germany and England.

EDMUND L. ROBINSON, factory manager of the Crescent Insulated Wire and Cable Company, Trenton, N. J., and Miss Florence Mingle, of Mifflintown, Pa., were recently married.

M. MARCUS, treasurer of the Puritan Rubber Company, Trenton, N. J., sailed recently for an extensive tour of Europe, where he will combine business with pleasure. He will be absent about two months and will call at his company's branch offices in London.

JOHN N. LEES has been appointed manager of the Indianapolis branch of the Goodyear Tire & Rubber Company. Mr. Lees has been with the company for the past 13 years. ROY A. MAYSE has been named as his assistant.

FRANK SPRINGER, who has spent some time on the Pacific coast for the Hewitt Gutta Percha Company, of Buffalo, N. Y., has been appointed vice-president of the company and will return east, making his headquarters at the home office.

ROSS ALLERTON, of the Goodyear Tire & Rubber Company's safety department, has been awarded the 20-year service pin for his loyal service since he entered the employ of the company in June, 1908.

CHARLES R. BOGGS, of the Simplex Wire & Cable Company, Boston, Mass., and chairman of the Boston Group of the Rubber Division, A. C. S., has been named chairman of the publicity committee of the coming convention of the American Chemical Society, to be held at Swampscott, Mass., September 10 to 14.

H. E. SIMMONS, is secretary of the Rubber Division of the American Chemical Society and will be active in connection with that division's meetings at the Swampscott convention of the Society. His present address is Bierce Library, Municipal University, Akron, O.

EDWIN B. SELF, sales promotion and advertising manager of the Dayton Rubber Manufacturing Company, Dayton, O., was the author of an article recently published in *Printer's Ink* on "Landing on the Prospect's Emotional Soft Spots."

K. B. MCMICKEN, superintendent at the Litchfield cotton plantation, Arizona, of the Goodyear Tire & Rubber Company, passed through Akron recently, on his way to Peru, where he will spend six months in a consulting capacity to the national association of cotton growers. His assignment to Peru, was the result of a visit to the Arizona properties by P. G. Beltran, a wealthy cotton planter of Peru, during the occasion of the Pan-American Congress last year. Mr. Beltran found the Goodyear cotton plantations developed to such a high point of scientific cultivation that upon his return home he prevailed upon the Association of Cotton Planters of Peru to request Mr. McMicken's services for six months.

COLIN MACBETH, prominently known as a consulting engineer in the rubber industry both in the United States and abroad, has announced that he is now available to specialize on consultative work in connection with tire manufacture and design, his restrictive service agreement with the Dunlop Rubber Company, Ltd., having expired in June. Mr. Macbeth's work in the development of the cord tire, drop base balloon type and giant pneumatic types, in addition to the previous development of solid and motorcycle types, is well known to the rubber trade throughout the world. His offices are at 67 Norwich Union Chambers, Congreve Street, Birmingham, England.

Colin Macbeth

E. L. BULLOCK, manager of the rubber division of A. Klipstein & Company, New York City, sailed on the S.S. *New Amsterdam* on July 28 to be gone about six weeks. He will visit his company's principals for rubber colors and compounding materials in Belgium, England, France and Germany.

FRANK B. MCNULTY, associate and brother of Joseph A. McNulty, importer of red oxide and pigments, was recently married to Miss Anna M. Narkum, of Ipswich, Mass. After a honeymoon in the Pocono Mountains, the couple will be at home at 699 Ocean Avenue, Brooklyn, N. Y.

HARRY HOAG, advertising manager of the *India Rubber World* is rapidly improving from his serious illness and is now able to spend a portion of the day out-of-doors. He was operated on in March at St. Mary's Hospital, Brooklyn, N. Y. His many friends will be interested to know that he is expected to leave the hospital within a few days.

FRANCIS A. EMMONS, sales and advertising manager of Foote Brothers Gear & Machine Company, Chicago, Ill., was recently elected president of the Engineering Advertisers' Association of Chicago, at the annual meeting of the association held at the Palmer House.

L. O. GUINTHER, aeronautical expert of the Goodyear Tire & Rubber Company, Akron, flew with Schlee and Brock, in the recent Ford reliability airplane tour which was held in connection with the international balloon races at Detroit.

D. E. ANDERSON will devote his entire time to rubber research work at the University of Akron, according to an announcement of DR. GEORGE F. ZOOK, president of the institution.

JOHN S. LATTA has resigned as manager of the Philadelphia branch office of the Manhattan Rubber Manufacturing Company, Passaic, N. J. During his many years with the company, Mr. Latta made many friends within the rubber industry and trade and the company makes the announcement of his resignation with regret. DAVID NEWHALL has been appointed to succeed him.

FRANK MARANVILLE, the well-known inventor and manufacturer in automobile circles, is now on the engineer staff of the General Tire & Rubber Company at Akron.

DR. H. L. TRUMBULL, of the research department of the B. F. Goodrich Company, recently addressed the Exchange Club at Akron on the subject of the experimental work now being carried on at the company's plant.

J. M. LINFORTH, manager of Goodyear truck tire sales, and HERMAN POST, manager of mechanical goods sales, have left for a two months' visit to Europe where they will make a survey of conditions.

R. E. BASKERVILLE, representative in the Philippines for the Firestone Tire & Rubber Company, is visiting Akron. While in the United States he will spend most of his vacation at his old home in Detroit.

W. E. SNELLING has retired as manager of the Toronto branch of the Ames Holden McCready Rubber Company, Ltd., of Canada, after 18 years' service and is succeeded by FRANK CARTAN, who has been covering the eastern Ontario territory for several years.

JOHN WESTREN, general manager of the Dunlop Tire & Rubber Goods Company, Ltd., Toronto, will represent the Canadian Manufacturers' Association at the Canadian National Exhibition.

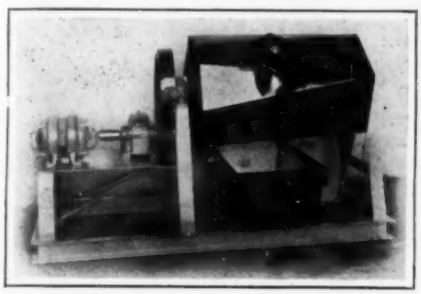
D. W. WARDEN, vice-president in charge of sales of the Dayton Rubber Manufacturing Company, Dayton, O., recently returned from a business trip to the Pacific Coast.

New Equipment for Rubber Factories

Quin Cement Mixer

A new type mixer, suitable for cements and glues, has recently been announced by its manufacturers, the Akron Standard Mold Co., Akron, Ohio. It is said that this machine, known as the Roy D. Quin mixer, is the result of several years' experimentation to develop a satisfactory model.

The mixer is light in weight, economical to operate and has few working parts. The barrel is so shaped that the mixing, aided by triangular plates, is thorough and quickly accomplished. The seams of the barrel are riveted and soldered on both sides. A filler cap and a quick opening clamp cover attachment enables the operator to draw off the cement or glue from the top. It is claimed that from 10 to 15 minutes only are required for mixing glue and water without steam.

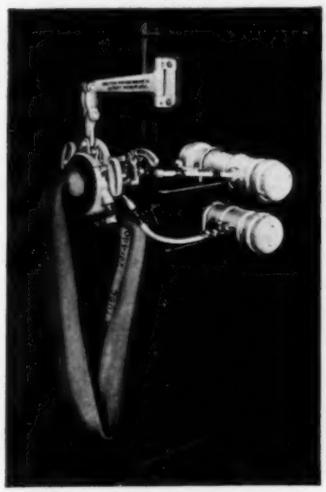


Roy D. Quin Cement Mixer

RUBBER MACHINERY FIRM EFFECTS REORGANIZATION

The firm of J. P. Devine Company, Buffalo, N. Y., according to a recent announcement of the concern, has been reorganized and hereafter will conduct the business under the name of the J. P. Devine Manufacturing Company, Inc. The concern are well-known manufacturers of vacuum dryers, evaporators, impregnators and other equipment familiar to rubber factories. The reorganization was brought about by the purchase of a larger interest in the business by the Mount Vernon Car Manufacturing Company of Mount Vernon, Ill. Walter C. Arthurs, president of the Mount Vernon company, will be chairman of the board of directors while Joseph P. Devine will continue as president. Other officers in the new reorganization are: H. H. Cust and C. P. Devine, vice-presidents; C. W. Reynolds, secretary; D. P. Settlemire, treasurer, and Graham Devine, assistant to the president and plant manager.

The new company will continue to manufacture the equipment and machinery which the former company has built for the past 25 years. The company plans to enlarge its present factory as well as its various technical and research departments.



Huetter Tube Splicer

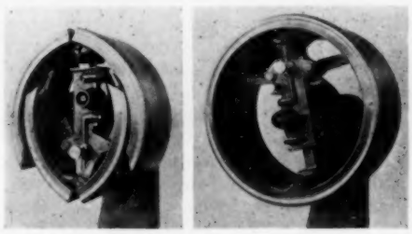
The device illustrated herewith is a new tube splicer recently introduced by the Huetter-Premier Machine Co., Detroit, Mich. In this splicer the air-bag is eliminated, the steam-heated jaws being lined with a soft rubber pad. The elimination of the air-bag has made possible the use of an expansion mandrel which expands under fluid pressure. This feature of the splicer is said to eliminate all possibility of pinching or wrinkling of the tube.

Heat is applied to the tube splice from both inside and outside, resulting in a uniform cure in from 3 to 5 minutes. These units are sold outright with no royalty charged on each tube. Officers of the Huetter-Premier Machine Company are: A. Huetter, president; F. B. Yehle, vice-president, and C. S. Culver, secretary.

New Tire Chuck and Drum

THE type FD tire chuck and drum illustrated herewith has just been made available to the trade by De Mattia Brothers Inc., Clifton, N. J., after it had been developed by a well-known tire manufacturer for use in their own plant. It is understood that several hundred of these chucks are now in use in the factory in which it was first designed.

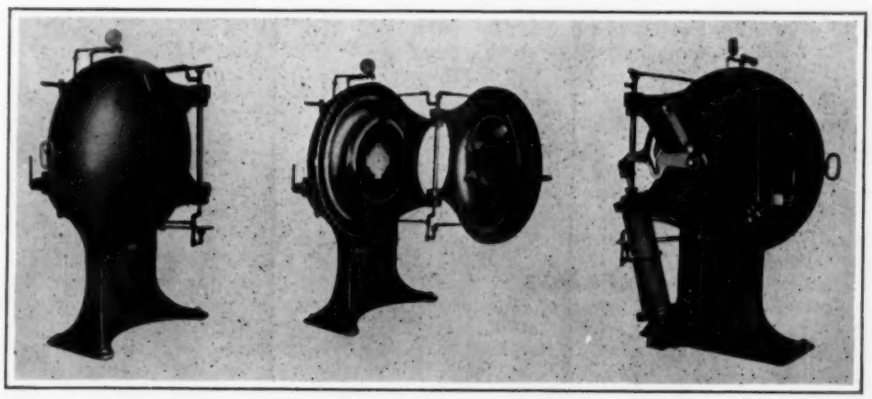
The master drum is permanently attached to the chuck and is operated through rack and pinion and segment gears. A hand wheel is used to operate the chuck, one turn of which collapses the drum. The chuck is practically all steel with all pivot bearings bronze brushed. The master drum is furnished to a jig, and dome type building forms of any size are interchangeable on the drum. Only one size and type is needed for building all sizes of tires.



De Mattia Type F.D. Chucks

The Westinghouse Electric & Manufacturing Company, 150 Broadway, New York City, have taken over the sales activity of The R. H. Nuttall Company, well-known manufacturers of gears, pinions, flexible coupling and other machinery parts.

Master Molded Tube Vulcanizer



The Akron Standard Mold Company, Akron, O., has just introduced a new single cavity molded tube vulcanizer for which many advantages are claimed. Its outstanding features are speed, simplicity and safety of operation. The vulcanizer has few working parts and accordingly is said to have a low maintenance cost.

Other features, according to the manufacturers, are low mold cost, no rind on tube, guaranteed thickness at the valve patch and uniformity of gauge. Two units are said to handle a complete range of tubes, which may be either the tubed or calender-built types. The air inlet is automatic and the outside mold housing insulates the mold, making for satisfactory operation in hot weather.

Timely Financial News

GOODYEAR TO WRITE OFF ITS INVENTORY LOSSES

Company Expected to Take Its Entire Loss as of June 30 Into Its First Half Yearly Statement—Deficit Estimated at Approximately $2,000,000.

THE Goodyear Tire & Rubber Company is expected to write inventories of crude and finished goods and commitments of every kind down to the market on June 30, taking the entire loss caused by raw material depreciation and tire price cuts in the first half of the current year, according to the *Wall Street Journal*. Such adjustments will result in a loss estimated at about $2,000,000, but can be easily met by the substantial contingency reserves which the company has set up and which totalled $6,250,000 in the last financial statement of the company.

The *Wall Street Journal* calls attention to the fact that it is apparent that with a reserve more than twice as large as that of any other company, Goodyear is in excellent position to weather the current storm in the industry and to report results for the year considerably in excess of its preferred dividend requirements.

The current year of readjustments has had the effect of postponing to some distant date the consideration of dividend payment on Goodyear's common stock. Although earnings in normal years, such as 1927, and the prospect of more stable results in the future, as result of abolition of artificial restriction of rubber exports from Far East, would make the payment of such dividends an eventuality of the not distant future, certain provisions, designed to protect prefered stockholders in the refinancing of a year ago, preclude such payments.

These protective clauses provide that no dividend shall be paid on the common stock until net current assets and consolidated net assets arrive at the point where they are equal, respectively, to $75 and $125 a share on the $7 first preferred stock. First of these provisions was more than fulfilled in the last balance sheet as of December 31, 1927, when net current assets totaled $95,658,562, equal to more than $117 a share on 813,495 shares of first preferred outstanding (assuming complete conversion of old preferred).

Consolidated net assets applicable to the preferred, however, fell short of the required mark by slightly over $24,000,000, or $30 a share, as of December 31, last. Rigorous nature of this provision apparently precludes the possibility of common dividends for at least two years, unless the management finds some method of circumventing the clause, the financial journal concludes.

CATALPO!

NEW LOW LEVELS TOUCHED IN RUBBER SHARE TRADES

The stock issues of the various rubber manufacturing companies have again shown a tendency to drop to lower levels and several new low records have been established in the course of trading during the last two weeks. The decline in rubber companies shares, while doubtless influenced by the drop in tire prices and the reports that most of the companies will show a decided slump in profits for the first six months of the year, is also the result of the general depression in the stock market.

Fisk and U. S. Rubber showed new low levels for both common and preferred issues, the former common touching 11⅛ while U. S. common dropped to 27. Both issues have reacted slightly, however, from these bottom limits. U. S. preferred is quoted at 57 after going as low as 55. Hood also went down slightly to 27. The drop in Intercontinental was anticipated on the strength of recent reports that their Mexican plants would stop operations until the rubber market improved, but it was hardly expected that it would go to the newly established low mark of 8⅛.

It is doubtful if there will be much improvement in values until after the publication by the various companies of financial statements for the first six months of the year or until a few more directors' meetings are reported and an opportunity is given the investing public to see just how the financial structure of the industry is holding up.

Late Stock Prices

	Last Price July 5	June 19	1928 High	1928 Low
Ajax	8⅛	7⅞	14⅜	7½
Firestone	170	170	232	170
do. 6% pfd.	108½	110	112	109
do. 7% pfd.	109¼	109	111½	108
Fisk	12	12⅜	17¾	11⅛
do. 1st pfd.	80	—	91½	79
General	165	170	190	165
do. pfd.	98	100	111	98
Goodrich	74⅛	71	99⅜	68½
do. pfd.	111	110¾	115	109½
Goodyear Com.	48½	48⅛	72½	47
do. pr. pfd.	98⅛	94½	99½	92½
do. pfd.	—	—	120	100
Hood	27	28	43	27
India	29½	34¼	45	16
Intercontinental	8¾	9½	21⅜	8⅛
Kelly Springfield	19½	17⅛	27⅜	15
do. 1st pfd.	63¾	64	80	58
do. 8% pfd.	—	—	84	55½
Lee	19¼	19	24½	17¼
Miller	19	19⅛	27½	18⅞
do. pfd.	76	76¼	97½	70
Mohawk	133	128	165	29¾
do. pfd.	85	85	85	55
Seiberling	39	39	49½	35
do. pfd.	107	107¼	107½	102
U. S. Rubber	29¾	35½	63¼	27
do. pfd.	57	66⅛	109⅜	55
U. S. Rubber Reclaiming Com.	—	—	16½	11½

RECEIVER NAMED FOR MASON RUBBER COMPANY

Stockholder Asks Receivership and Claims Company Lacks Tangible Operating Capital—Liabilities Set at $600,000—Plant to Continue to Operate.

AS a result of a petition filed in the court of common pleas of Ravenna, O., on June 28, by J. B. Rieker, an employee and stockholder of the Mason Tire & Rubber Company, claiming that the company had no tangible working capital, the court has named P. W. Eigner, president of the Kent National Bank, Kent, O., as receiver for the rubber company.

Upon formal notification of his appointment as receiver, Mr. Eigner stated that the Mason Company would continue to operate and fill orders and that the company had been "caught in one of the evils of the rubber tire industry." The difficulty in which the company found itself was due primarily to the cut in tire prices and the reduction in the market value of crude rubber, necessitating a heavy loss in inventories.

The plant was temporarily closed for the purpose of taking an account of stocks but is resuming operations on a part-time basis. A. C. Bowers, present production manager, and G. L. Morse, treasurer of the company, will be retained by Mr. Eigner to operate the plant. No statement has been made by W. A. Cluff, president of the company, in regard to the receivership action.

According to the petition filed by Mr. Rieker, liabilities are stated at approximately $600,000. Current assets are listed at $1,500,000, including raw material and work in progress, but such company holdings are unavailable as a source of operating revenue. Last year's annual report showed a deficit of $472,897. It is the opinion of Mr. Rieker and the stockholders behind the suit that the company is not insolvent. It is their judgment that a reorganization and careful management will put it on its feet.

Mr. Rieker says that his reason for his action is that the company in the past has done a large business in the manufacture of tires and tubes, but for the past eight months on account of the disturbed condition of the market and the fluctuating prices of crude rubber, has been unable to sell its stock. A large percentage of the company's business was the furnishing of tires for the Ford Motor Company, but since the introduction of a new model by that company, production has fallen off greatly.

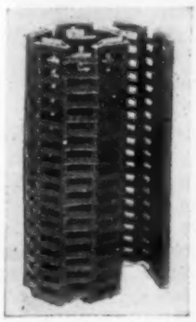
Mohawk Resumes Dividends

Following closely on the completion of the refinancing of the company and the spectacular rise of its common stock, the Mohawk Rubber Company, Akron, O., has resumed the payment of the quarterly dividend on the preferred stock of 1¾ per cent, payable July 2.

Rubber Goods and Specialties

Rubber Link-type Mat

A floor mat of the link type and made of cord fabric, 11/16" thick and heavily impregnated with rubber, is the latest development of the Edwards Manufacturing Company, Cincinnati, O. It is being put on the market under the trade name "Softred." Each row is solidly joined with steel rods and decorative end links. Besides being soft and cushion-like to the feet, it gives a quietness which recommends it particularly to hospitals, theatres, etc., where it is desirable to eliminate noise. Four stock sizes are made. The mat easily washed with flushing water and can be readily rolled up or folded into small space while the floor it protects is cleaned. The manufacturers claim that its wearing qualities equal any of the present floorings of similar type. The mat is also meeting a demand for use behind the counters in stores, lunch rooms, soda fountains and the like where it is necessary for clerks to be on their feet continuously.



Rubber Auto Hood Lacing

The F. C. Hersee Company, Watertown, Mass., is producing a new type of auto hood lacing made of rubber 1⅛ in. wide and ⅛ in. thick, with an upstanding rib that fits tightly between the hood, cowl and radiator and acting as a seal against water, oil or grease. It also eliminates rattles and squeaks. Twelve feet are required to service the ordinary car.

Rubber Candle Fitter

One of the novelties offered to the trade by the Schacht Rubber Manufacturing Company, Huntington, Ind., is a rubber candle fitter, as shown in the accompanying illustration, designed to hold candles firmly and straight in the candle-stick socket. Being stretchable, it will fit candles of varying diameters. The device is fitted on the end of the candle before inserting in the holder and eliminates the use of paper, cloth and other emergency methods so often used in this connection. They are packed for the trade in attractive boxes for display, one gross to the box.

Sponge Rubber Soap Dish

Rubbersan Products, Inc., 229 East 38 Street, New York City, have recently introduced to the trade a novelty sponge rubber soap dish, which has a number of attractive features. It is made of one piece of sponge rubber and will not crack or get out of shape. Its absorbant qualities prevent the soap from melting. A mere squeeze at the conclusion of the bath and it is dry. At the same time it can readily be used as a body sponge or in cleaning up the basin or tub after using. Being soft and pliable, it will fit in both the wire soap dishes on the side of the bath or the more modern built-in receptacles. It is manufactured in various colors and retailed in an attractive display box as shown in the accompanying illustration.

Rubber on Baby "Walker"

A baby's "Safety-Walker," with a wide rubber-bound base which is designed to prevent injury to both baby and furniture, during the period the child is learning to walk, is the latest development of the Rockaway Manufacturing Company, of Cleveland, O. The construction is such that the child assumes a natural position, with feet flat on the floor, and back straight. An important feature is the free-moving saddle seat. The wheels and casters are heavily tired and the body ring and lower ring are of steel covered with soft rubber. The handle bar is also rubber covered. When not in use the "Safety-Walker" folds flat and is easily carried or stored away.

Lineman's Rubber Blanket

The lineman's safety blankets manufactured by the Gates Rubber Company, Denver, Colo., have recently withstood 50,000 volts of electricity for a period of 72 seconds. Actual conditions in the case of ordinary use by linemen call for protection not exceeding 10,000 volts as the maximum. The exact thickness of the blanket is .185 of an inch. They are made of pure rubber of the highest quality, the only fabric being a reinforcement at each corner which takes an eyelet and at the four tabs provided, two in each of two sides, for tying the blanket to the wire. Each blanket manufactured is tested thoroughly up to the maximum of 10,000 volts.

Imported Water Animals

Inflatable rubber beach and bathing pool animals have enjoyed a season of increasing popularity and domestic rubber specialty manufacturers generally are coming into the market with new designs almost daily. Many importations are finding a ready market, one of the latest arrivals being the "Watermount," made by the well-known British sporting goods and footwear manufacturers, Fortnun & Nason, Ltd., of London, and marketed in the United States through Fortmason, 719 Madison avenue, New York City. The "Watermount" is easy to ride, is propelled by the hands and guided by the feet. It is constructed of thick rubber with reinforced seams and weighs about 5 pounds.

Rubber Sweat Shirt

An effective sweat or "reducing" shirt of pure rubber to be worn over the undershirt while exercising is one of the latest products introduced into the large line of rubber goods manufactured by I. B. Kleinert Rubber Company, 485 Fifth Avenue, New York City. Wearing it over the undershirt prevents the rubber from being felt on the bare skin, nor will the rubber adhere to the body once the sweating is induced. The lines of the shirt are made to conform to body lines. The rubber is reinforced at the points of extreme strain. The manufacturers claim that sweating can be induced quicker with this form of shirt than with the usual type of sweat shirt.

Current Crude Rubber Items

RUBBER EXCHANGE PUTS LIMIT ON CREDIT SALES

Adopts New Rule Prohibiting Extensions of Credit to Customers in Excess of $1,000—Board of Governors' Action Causes Comment.

THE board of governors of the Rubber Exchange of New York, Inc., have given notice of the adoption of a new rule prohibiting, under penalty of expulsion, the extension of credit to customers in excess of $1,000.

The rule, which goes into effect October 1 next, is believed to be the most drastic of its kind ever adopted by a commodity exchange. When it becomes effective, it will prohibit any firm or individual from giving a customer, regardless of whether the customer is a member of the exchange or not, a credit of more than $1,000, exclusive of commissions, in the purchase or sale of rubber futures on the exchange.

The new rule is designed to further safeguard rubber trading, to discourage unwarranted speculation in rubber and to encourage hedging by manufacturers and producers. The posting of the rule on the bulletin board on the trading floor caused a wide discussion of its possibilities by the members, and it was also commented upon by members of other commodity exchanges when they learned of it.

F. R. Henderson, president of the Rubber Exchange, made the following statement in regard to the adoption of the rule:

"The board of governors had long considered incorporating in the rules a provision prohibiting the extension of credits, but deemed it wise to defer action until such time as the Rubber Exchange was as firmly established as it is today. While the new rule may appear at first to be severe, it is my sincere belief that it will prove to be one of the most progressive steps in safeguarding futures trading and encouraging use of trade insurance hedging facilities, which has ever been taken by any commodity market.

"It is my conviction, too, that other commodity exchanges will appreciate the soundness of this action. This move to further elevate the standard of trading on the Rubber Exchange already has the endorsement of conservative commission houses and representatives of leading rubber dealers. Every financial institution will recognize the wisdom of the action taken."

The new rule is as follows:

"Rule 59. The extension of credit or credits in excess of $1,000 (exclusive of commissions) to a customer, whether a member or non-member, in connection with the purchase and/or sale of rubber on the Rubber Exchange, is declared to be an act detrimental to the best interests of the Exchange, and is hereby prohibited. Any equity which a customer may have in his account with the member in connection with trading in or ownership of any other commodities or securities may be applied in payment of variation margins to the extent to which such equity may be available beyond the requirements for margins on such other commodities or securities. Any member knowingly violating the provisions of this rule shall be subject to suspension or expulsion under Section 43 of the By-Laws."

CEYLON SEEKS TO END RESTRICTION

The Ceylon Legislative Council has presented a motion to the effect that Ceylon is unwilling to remain under the Stevenson restriction scheme any longer. The native element in the council has always been against restriction, but it is thought that European-owned estates would in any case adhere to the present restriction policy until November 1. At all events, the matter is not being taken seriously in London rubber circles as the governor of Ceylon's approval is necessary before action can be taken and it is possible that a veto would follow any favorable passage of the motion.

New Exchange Members

The secretary of the Rubber Exchange of New York, Inc., has announced that the following have been added to the membership; E. A. Canalizo, of E. A. Canalizo & Company, New York City, and George H. Earle, 3rd, of the Flamingo Sugar Mills, Inc., Philadelphia, Pa.

EXCHANGE TRADING TAKES ON DULL TONE

Market Extremely Quiet With Prices Apparently Stabilized Around 19 Cents—Quotations on Distant Positions Show Weakness of Futures.

TRADING on the Rubber Exchange of New York during the last fortnight has been quiet and featureless. The market has steadied around 19 cents and very little variation from that level is expected in the immediate future. The statistical position of rubber has improved as shown in the continued decline in London stocks, but what little encouragement this fact gives to the crude rubber brokers is offset by the anxiety as to what will happen after November 1. As a consequence while no further drop in price levels is expected, there is little likelihood of any bullish movement taking place for the next few months.

The trading on the floor of the Exchange has been extremely light and the general tone of the market has changed from one of quietness to one of dullness. In no single day during the fortnight has there been sales exceeding 800 contracts. There appears to be plenty of selling orders in the hands of operators for large interests but little buying interest.

The foreign markets have also been quiet and steady. Nor has there been the foreign interest in the New York market which has been active over the last few months. Speculative interest has been entirely absent.

A feature in the trading during the last two weeks, and a fact that clearly indicates the lack of confidence of the traders generally in the future market, has been the weakness of the future positions, they being quoted in some instances at lower levels than nearby positions.

The table below indicates the daily changes in prices on the Exchange and the daily volume of sales.

The Norwalk Tire & Rubber Company, Norwalk, Conn., reported a loss for the first quarter of the current year of $41,018 after deducting all charges. This compares with a loss of $7,634 for the last quarter of 1927 and a loss of $46,953 in the corresponding first quarter of last year.

The board of directors of Stedman Products Company, South Braintree, Mass., manufacturers of rubber flooring, have declared the 39th consecutive quarterly dividend of $1.75 per share.

Closing Prices on Rubber Exchange of New York, Inc.

JUNE 21 TO JULY 5, 1928

Date		Spot	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Sales*
June	21	19.50	19.40	19.50	19.50	19.50	19.50	19.50	19.40	19.30	19.30	19.40	19.40	.....	262
	22	19.30	19.30	19.40	19.40	19.40	19.40	19.30	19.20	19.20	19.20	19.20	19.20	.....	163
	23	19.40	19.30	19.30	19.40	19.40	19.40	19.40	19.10	19.20	19.30	19.20	19.20	.....	154
	25	19.30	19.30	19.40	19.40	19.40	19.30	19.10	19.10	19.10	19.10	19.10	19.10	.....	204
	26	19.30	19.30	19.40	19.30	19.30	19.30	19.30	19.20	19.20	19.10	19.20	19.10	.....	211
	27	18.80	18.70	18.90	19.00	18.80	18.80	18.80	18.80	18.80	18.80	18.80	18.80	.....	788
	28	18.70	18.70	18.80	18.90	18.90	18.90	18.90	18.60	18.60	18.70	18.70	18.80	.....	317
	29	18.80	18.70	18.70	18.80	18.70	18.70	18.70	18.60	18.60	18.70	18.60	18.60	.....	418
	30	18.70	18.60	18.70	18.80	18.80	18.70	18.60	18.60	18.60	18.60	18.60	18.60	.....	92
July	2	18.60	18.50	18.50	18.50	18.50	18.50	18.50	18.40	18.40	18.40	18.40	18.40	18.40	344
	3	18.50	18.40	18.40	18.50	18.40	18.40	18.40	18.40	18.30	18.30	18.30	18.30	18.40	466

*In lots of 2½ tons each

CATALPO!

Rubber News Around the World

GERMAN TIRE CONCERNS PLAN A CONSOLIDATION

Manufacturers Include Largest Firms in Germany—Combine Would Greatly Help in Meeting Present Competition From Foreign Sources.

THE recent advance in European markets of the shares of the Continental Caoutchouc & Gutta Percha Company of Hanover and the Hamburger Gummiwarenfabrik "Phoenix," of Hamburg, two of the leading German tire manufacturers, is taken as confirmation of the report, published in the last issue of THE RUBBER AGE, of the merger of these two concerns and other German rubber manufacturers into a rubber industry trust.

Negotiations to bring about a fusion of the two concerns were commenced about two years ago, but apparently led to no result. It is thought generally that, in view of the present condition of the rubber market and the fact that stronger financial circles are interested in a concentration of the rubber industry than previously, the present time is very opportune for the realization of such a project.

The concerns mentioned as believed likely to be fused are the Continental Caoutchouc & Gutta-Percha, having a capitalization at present of 40,000,000 marks; the Harburger Gummiwaren-fabrik "Phoenix," with a capitalization of 7,200,000 marks, and Peters Union of Frankfurt-on-Main, with 9,000,000 marks. The Hannoversche Gummiwerke "Excelsior" of Hanover, with a capital of 6,000,000 marks, is controlled already by Continental.

All of these companies, in addition to producing automobile tires, manufacture many other rubber articles. They would constitute the backbone of the rubber industry trust, and it is thought would commence by simplifying the manufacture of rubber tires. That this is likely to be one of the principal aims of the new combination can be deduced from the negotiations which have taken place concerning the transfer of the production of "Phoenix" tires from Hamburg to the Continental works at Hanover.

DUTCH TRADERS ACCEPT DROP IN PRICES CALMLY

The recent headlong fall in rubber prices was accepted with remarkable calmness by the majority of the larger Batavia rubber traders, according to reports from United States Trade Commissioner T. A. Barringer, transmitted to the Department of Commerce. There has even been a spirit of distinct optimism among a number of the rubber producers and one reason for this has been the foresight of several large Netherland firms in making forward sales.

The Netherlands East Indies Rubber Association, and such firms as Tiedaman & van Kerchem, Maclaine Watson & Co., Rowley Davies & Co., and the Straits "Sunda" Syndicate are reported to have sold enough of their production forward into 1929 at a price sufficient to cover operating expenses of their estates. The firm Tiedeman & van Kerchem sold 40 per cent of its 1929 production at the average price of 41 gold cents per pound. The Straits "Sunda" Syndicate took a plunge and made forward contracts through 1929 for considerably more than their estate capacity to produce.

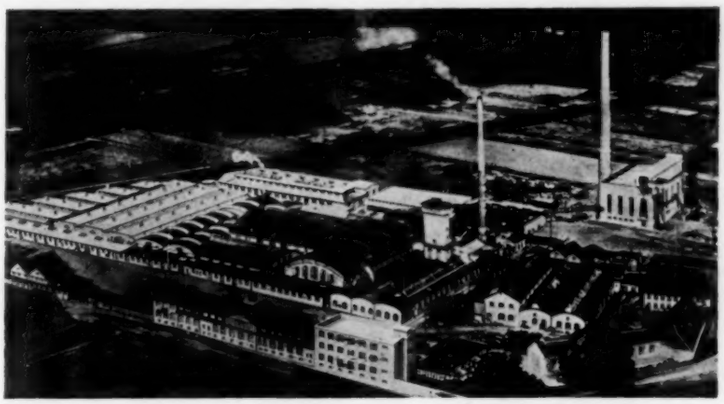
The Netherland Indies Rubber Traders' Association has issued a circular to rubber producers, regarding the packing of rubber meant for shipment abroad. This circular is a result of the measures taken by the Rubber Association of America, Inc., and the Rubber Trade Association of New York to ensure the delivery of rubber in good condition and the elimination of all extraneous matter, such as dirt and wood splinters, as has occurred so frequently in the case of shipments in recent years, and regarding which complaints have been made by American importers of this product.

Ceylon Reduces Duty

The Ceylon legislature has reduced the export duty on crude rubber from 3¼ to 1¼ rupee cents per pound. The duty effective immediately, including the medical wants tax and restriction tax, will be 2¼ rupee cents per pound.

With the increasing development of the local tire manufacturing industry in Australia comes the announcement through the Sydney press, that plans are rapidly nearing completion for the production of a motor car factory in Australia, to be located at Lidcombe, an industrial suburb of Sydney, and that production will actually begin before the end of 1928.

German Dunlop Factory From the Air



Dunlop Rubber Company of Germany celebrated its 40th anniversary this year. The plant is located at Hanau.

PROFITS OF BIG BRITISH CABLE FIRM SHOWS DROP

The announcement that the India Rubber, Guta Percha & Telegraph Works, London, would pass its interim dividend to the ordinary shareholders, owing to the depressed outlook, has caused no surprise. The preference dividend, however, is to be paid as usual. Following the decision to strengthen the board, Sir John Ferguson and F. W. Lloyd have accepted membership on the directorate, and the former has consented to become chairman.

It is generally thought that the costly factory which was erected at Burton-on-Trent during the war has been a heavy loss and has eaten into the substantial profits derived from the Silvertown works at London. It is also a question whether the French factory at Persan is worth keeping, and these are matters on which Sir John Ferguson will be better able to form judgment than the old members of the board who were responsible for them.

Goodyear Opens New Depots

The Goodyear Tire & Rubber Co. (Great Britain, 1927), Ltd., has recently opened a chain of depots to supplement its existing branches in London, Manchester, Glasgow, Belfast, and Dublin. These new depots are in Birmingham, Plymouth, Bristol, Newcastle on-Tyne, Leeds, Edinburgh and Aberdeen.

CATALPO!

GENL. ANDREWS IS GUEST OF N. J. RUBBER ASS'N

The annual meeting and dinner of the Rubber Association of New Jersey was held early in June at the Trenton Country Club. Covers were laid for 45. The guests included General A. Lincoln Andrews, director general of the Rubber Institute, Inc., and representatives of nearly all the large rubber manufacturing concerns in the country. There were no speeches and following the dinner the members and guests played golf. The guests included the mechanical rubber division of the Rubber Association of America. John A. Lambert, of the Acme Rubber Company, was chairman of the entertainment committee, while A. Boyd Cornell, president of the New Jersey Association, presided at the business meeting.

SIX MORE PLANTATIONS FORM AN AMALGAMATION

The amalgamation of rubber plantation companies in England continues, the latest scheme having as its object the conversion of six small companies into two large and more economical units. All six companies are members of the same group, a circumstance which greatly facilitates fusion.

The scheme provides that the North Malay Rubber Estates should be formed out of the Baling, Kuala Dingin, and Subur Rubber Estates, and that the Rasa (Selangor), Sungei Raya, and Tawar Rubber Estates should amalgamate under the title of the Rambutan Rubber Estates. In each case the capital of the new companies to be created will be £400,000. The North Malay will have a planted area of 4,524 acres, capitalized at £55 14s. per acre, while the Rambutan's acreage will be 4,772 acres, the capitalization representing £50 6s. per acre. The saving in directors' fees to be effected by the amalgamation will amount to £2,150. The crop of the Rambutan for 1928 is estimated at 800,000 lbs., and that of the North Malay at 760,000 lbs. Eventually, however, when the present planted area has matured, crops should amount to 2,000,000 lbs. and 1,500,000 lbs., respectively.

The United States Rubber Company, New York, has placed the advertising of its footwear, clothing, Naugahyde luggage and jar rubbers with the Blackman Company, New York City.

Auto Parts Business Good

For the third month in succession the automotive parts and accessory business in May established a new seasonal record for volume and seems likely to repeat the performance in June. A large group of representative members reporting to the Motor and Accessory Manufacturers' Association stated that May shipments ran considerably ahead of April and closely approached the record for all time, made in March. These companies were operating on heavy schedules throughout the first three weeks of June, making it certain that the first half-year's business will be the greatest in the history of the industry.

With car and truck production and retail sales continuing in June at high levels, the parts makers' plants also were operating well up toward capacity.

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Binney & Smith Co
41 E. 42nd Street-New York City

LONDON SPECULATES ON NOV. RUBBER OUTLOOK

Developments during the past week in London, according to reports received by the Department of Commerce, point to a growing realization that the two chief factors of interest to the rubber trade are the probable size of stocks of rubber that will be accumulated on plantations in Malaya and Ceylon by November 1, and the effect of low prices on the production of Netherlands native rubber.

Estimates by leading London rubber brokers, as to the first factor named, vary between 50,000 and 100,000 tons, this range being given by Faulkner and Winsor, and also mentioned by correspondents to the *Financial Times*. Faulkner and Winsor also report local assertions that Netherland native rubber production this year will suffer a 30 per cent reduction if the London price is 1s. and a 50 per cent reduction if the price is under 9d. Both this firm and Symington and Sinclair conclude that it will be months before one can judge the real effect of low price on native output, further than to say that a price below 1s. will result in substantial reduction. The effect of the constant decline in price on the native output during March, April, and May, may perhaps prove temporary.

Ticker System Installed

The Western Union Telegraph Company has installed the New York Rubber Exchange ticker system in ten offices in Akron. Heretofore, the rubber quotations were sent as individual messages over Western Union wires every 15 minutes and delivered by telephone at the point of destination to those interested. Now the complete service of the New York Rubber Exchange will be available at Akron and the vicinity by ticker instantaneously.

The rubber quotations are transmitted from the Rubber Exchange by a Western Union operator direct from the exchange floor and through the projection ticker installed in their offices, those interested in Akron can watch the quotations flashed on a screen as soon as they are reported, enabling them to keep currently posted on the market trend.

MAN 'SHOOTS' NIAGARA FALLS IN RUBBER BALL

The feat of successfully "shooting" Niagara Falls was accomplished for the third time on July 4, when Jean A. Lussier, of Springfield, Mass., went over the Horseshoe Falls in a huge rubber ball. The ball was specially constructed with air chambers and seating space, and weighed 700 pounds. Lussier started from a point off Cayuga Island, strapped in the ball, and finished the trip only slightly bruised, 50 minutes later. He is said to have staked every cent he owned on the venture, but now expects to recoup by lecturing and exhibiting his curious contraption.

Due to the heavy production schedule and crowded conditions in the plant of the Eagle Rubber Company, Ashland, O., parts of the Ashland Match Factory and Ashland Tire Companys' quarters in the same building have been taken over by the Eagle company and plans are under way for the enlargement of the establishment.

The Omo Manufacturing Company, Middletown, Conn., makers of rubber dress shields, bathing caps and sanitary goods, will close its plant from July 21 to August 4, for the usual annual vacation period.

LATEX PRODUCTS COMPANY MAKING RAPID PROGRESS

The Latex Products Company, Barberton, O., announces that production is now in full swing and that 75 employees are now on the payroll. The number will be steadily increased until full capacity production is reached. Salesmen for the company started on the road last month and T. W. Casey, sales manager, is confident over the outlook. The new plant is manufacturing rubber sundries.

C. W. Seiberling, president of the company, was host recently to 15 officials and salesmen at the Akron City Club.

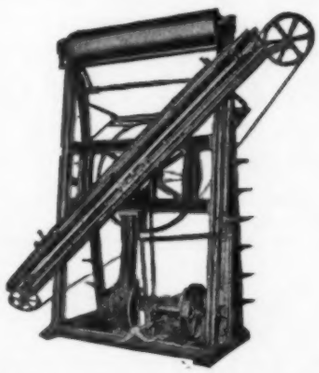
The Latex Products Company was formed recently to take over the plant of the Rubber Products Company, then in disuse. The present name of the concern supplanted that of the K. & S. Rubber Company, which was the first name chosen.

Boston Holds Footwear Show

The Boston Shoe and Leather Fair, which is being held at the Hotel Statler, Boston, July 9, 10 and 11, will contain exhibits of several of the rubber footwear manufacturers. The program includes a musical show in which footwear will be prominently featured and a style show, in which each exhibitor will display his choice of style leaders.

To Sell Helium Gas

The discovery of a new field in Texas by the Goodyear Tire & Rubber Company for the production of helium gas has made the gas available in greater quantities than ever before and the company has recently announced that it will offer the gas for sale to individuals. The market for helium gas is expected to increase with the use of lighter-than-air craft.



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ACCIDENTS DECREASING IN AKRON RUBBER PLANTS

A marked decline in the number of serious accidents in the rubber manufacturing plants of the Akron district is noted in a recent report of the National Safety Council. The Goodyear Tire & Rubber Company reduced accidents 52.8 per cent during May and for the period of the first four months of the current year as compared with the same period in 1927 the total decrease was 27 per cent. The Firestone and Goodrich companies also report a substantial decline in the severity rate. Miller Rubber Company had a 33 per cent decrease in frequency of accidents but a slight increase in severity. The Seiberling Tire & Rubber Company reduced the number of accidents 25 per cent and the days lost 20 per cent.

The "News-Letter" of the Rubber Section of the National Safety Council has been revived under the editorship of L. W. Durkee, of the compensation department of the Goodyear Tire & Rubber Company, Akron, O.

Acid-Resisting Pumps

The Bingham Pump Company, of Portland, Ore., is placing on the market a line of pumping equipment, one of the chief features of which is that the entire pump and impeller, with the exception of the shaft, is of hard rubber molded from polished steel dies which makes the pump capable of handling all acids except concentrated sulphuric. The pumps are of the side suction, inclosed impeller type.

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Pneumatic tire expert with experience in design and construction. Write fully, giving experience and salary expected. Address Box 487, THE RUBBER AGE.

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RUBBER SALES EXECUTIVE with many years' experience desires position as Sales or Branch Manager. References as to character and ability. Address Box 488, THE RUBBER AGE.

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LATE MARKET PRICES

Crude, Scrap & Reclaimed Rubber - Cottons and Fabrics

JULY 5, 1928

COTTON

LARGELY on the strength of the unfavorable crop reports of the last fortnight the cotton market has advanced, but the unhealthy state of the manufacturing industry and the lack of business in the wholesale market has tended to hold in check any bullish movement in raw cotton. Cool and wet weather throughout the cotton belt has aided the boll weevil and a heavier emergence is reported from most districts. The backwardness of the crop is causing considerable concern in the market and it has been generally stated that unless a prolonged improvement in weather conditions commences within a few weeks, a serious situation may develop and a definite shortage occur.

High, low and closing quotations as of July 5 were as follows:

	High	Low July 5	Close	Close June 20
July	22.05	21.82	21.85	20.73
October	22.25	21.95	22.00	——

Tire Fabrics

The demand in the tire fabric market has been somewhat stimulated by the rising cotton market and prices have also slightly advanced. The market has also been well filled with inquiries, indicating that manufacturers are getting ready for further commitments. The continued heavy production of balloon tires of the 6-ply construction is aiding the tire fabric industry considerably and factories are reported to be producing at full capacity. The cut in tire prices also brought additional activity into the market and more than a half-million pounds of fabric were sold within a few days of the announced tire reductions.

CORD			
Peeler, carded, 23/5/3	lb.	.46 @	.47
Peeler, carded, 23/4/3	lb.	.47½@	.48½
Peeler, carded, 13/3/3	lb.	.43½@	.44
Peeler, carded, 15/3/3	lb.	.44½@	.45
Egyptian, carded, 23/5/3	lb.	.56 @	.57
Egyptian, combed, 23/5/3	lb.	.60 @	.61
CHAFERS			
Carded, American, 8 oz.	lb.	.41 @	.42
Carded, American, 10 oz.	lb.	.41 @	.42
Carded American, 12 oz.	lb.	.42 @	.44
Carded American, 14 oz.	lb.	.40 @	.44½
LENO BREAKER			
Carded American, 8¼ oz.	lb.	.40 @	.44
Carded American, 10¼ oz.	lb.	.40 @	.44
SQUARE WOVEN			
Carded American, 17¼ oz. 23-11 ply	lb.	.46 @	.47
Carded American, 17¼ oz. 10-5 ply	lb.	.40 @	.41

Sheetings

The movement in the sheeting market has been scattered but a fairly large volume of transactions in 40-inch constructions and in special constructions has been reported. Prices have reflected the advance in cotton, but have not been held firm on orders of large quantity.

40-inch, 2.50-yard	yd.	.12½@	.12¾
40-inch, 2.85-yard	yd.	.11¼@	.11½
40-inch, 3.15-yard	yd.	.12 @	.12¼
40-inch, 3.60-yard	yd.	.09¾@	.10
40-inch, 3.75-yard	yd.	.09 @	.09¼
40-inch, 4.25-yard	yd.	.08¼@	.08½

Ducks

Buyers have been active in the cotton duck market and a number of orders in fair quantity have been reported. Prices have advanced slightly in line with raw cotton, hose and belting ducks being quoted up to 38 cents. Duck houses on the other hand are finding awning ducks hard to move because of the unseasonable summer.

Belting and Hose	lb.	.36 @	.38
Enameling	lb.	.36½@	.39
Single filling	lb.	.16½@	.18
Double filling	lb.	.18 @	.19

RECLAIMED RUBBER

The reclaimers have found no let-up in the demand in spite of the continued low crude rubber market and a number of the reclaiming plants are going ahead on heavier production schedules than ever before. The low price levels in the crude rubber market have forced a reduction in some grades of reclaimed but the new prices are only slight cuts from previous levels. On the other hand, prices on tire grades which form the bulk of the demand, have not dropped. Competition in the market has become considerably keener, according to the reports. Late prices are as follows:

High Tensile			
Super-Reclaim No. 1 Black	lb.	.13½@	.14
Super-Reclaim No. 2 Black	lb.	.11¾@	.12
High Tensile Red	lb.	.13½@	.13¾
Shoe			
Unwashed	lb.	.07¼@	.07½
Washed	lb.	.10 @	.10¼
Tube			
No. 1 (Floating)	lb.	.14½@	.15
No. 2 (Compounded)	lb.	.11 @	.11½
Tires			
Black, washed		.09½@	.10
Black, unwashed		.07¾@	.08
Black selected tires	lb.	.08¼@	.08½
Dark Gray	lb.	.09¾@	.10
Light Gray	lb.	.12 @	.12½
White	lb.	.13½@	.14
Truck, Heavy Gravity	lb.	.07¼@	.07½
Truck, Light Gravity	lb.	.07¾@	.08
Miscellaneous			
Mechanical Blends	lb.	.07 @	.08
Red	lb.	.13½@	.13¾

Scrap Rubber

There has been a very active demand from reclaimers for tire scrap during the last two weeks and supplies have not been sufficient to fill orders. Accumulations have been slow and collections have been somewhat discouraged by the low prices offered by the collectors. Prices offered by the dealers have been cut so low in the case of boots and shoes that they are no longer profitable to handle.

(Prices to Consumer)

Auto tire peelings	ton	32.00	@34.00
Standard White auto	ton	50.00	@52.00
Mixed auto	ton	22.00	@23.00
Bicycle tires	ton	25.00	@27.50
Clean solid truck tires	ton	22.00	@24.00
Boots and shoes	lb.	.01¼@	.01⅜
Arctics, trimmed	lb.	.00⅝@	.01
Arctics, untrimmed	lb.	.00½@	.00¾
Inner tubes, No. 1	lb.	.06⅝@	.07
Inner tubes, No. 2, compounded		.04¼@	.04½
Inner tubes, Red	lb.	.05⅝@	.06
Air Brake Hose	ton	35.00	@37.50
Rubber Hose	ton	18.00	@20.00

CRUDE RUBBER

THE crude rubber market has been extremely dull during the past fortnight with prices holding quietly around 19 cents. A scattered buying interest, with the demand being in only small lots, has been the feature of the trading. The market has been held up, however, by the continued inquiries coming from factories and abroad, indicating that a renewal of buying in substantial volume may be in the offing. Such sales as occurred were for spot deliveries. It would appear that the market generally had reconciled itself to a period of quiet at the prevailing levels. It is uncertain if the prices will fall further, especially in view of the improvement in the statistical position of the commodity, but there is still lacking any confidence in the situation after November. London stocks have continued their steady decline and have now reached the low figure of 38,500 tons, but shipments to the United States continue heavy.

Production within the rubber manufacturing plants is reported to be continuing with heavy schedules and indications are that the high consumption figure of May will be even exceeded by that of June.

What little fluctuation as has ocurred between daily quotations have been extremely narrow. Paras and off grades have been listed for the most part as nominal.

Prices on the New York outside market on July 3, were as follows:

Plantations—			
Ribbed Smoked Sheets—			
Spot		.18¾@	.19
July		.18⅝@	.19
Aug.-Sept.		.18⅝@	.19
First Latex, crepe spot		.19¼@	.19¼
Amber Crepe, No. 2		.18¾@	.19
Amber Crepe, No. 3		.18½@	.18¾
Amber Crepe, No. 4		.17¾@	.18
Brown Crepe, Rolled		.18 @	.18¼
Brown Crepe, Clean, thin		.18¼@	.18½
Brown Crepe, specky		.17¾@	.18
Liquid Latex, per gal.		@	1.50
Paras—			
Up-river Fine		.23 @	.23½
Up-river Medium		Nominal	
Up-river Coarse		.14½@	.15
Acre Bolivian, fine		.22½@	.23
Caucho Ball, Upper		.14 @	.14½
Islands, fine		.16 @	.16½
Centrals—			
Central, scrap		.15 @	.15½
Esmeraldas		.15 @	.15½
Guayule, washed and dried		— @	.16
Balata—			
Block, Colombia		Nominal	
Block, Cuidad		.38 @	.39

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers			
Spot	9	@	9⅛d
July	9	@	9⅛d
Aug.-Sept.	9⅛	@	9¼d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers			
Spot	8¾	@	8⅞d

Charles T. Wilson Co., Inc.
44 Beaver Street New York

Importers of

CRUDE RUBBER

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AKRON OFFICE: 507 Second National Building
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LATE RUBBER CHEMICAL PRICES

Accelerators — Colors — Softeners — Compounding Materials

NEW YORK, JULY 6, 1928

PRODUCTION schedules of the tire manufacturers continue at peak levels with reports that June set a new record. This condition has resulted in excellent business for producers of rubber chemicals and compounding ingredients, who report large shipments of all classes of materials. Staples such as blacks, clays, mineral rubber, accelerators and anti-oxidants are moving at a fast pace, in many cases express shipments being requested for current needs. A new accelerator of the aldehyde series, A-32, was introducd in June. Its manufacturers claim that it is a more powerful accelerator than others of the same series but it has similar temperature characteristics. It is said to be retarded less by carbon black and reclaimed rubber than the other members of the series. Quotations in the list of rubber chemicals have been firm with few changes noted.

ACCELERATORS

Organic			
A-7	lb.	.55 @	.59
A-11	lb.	.62 @	.66
A-16	lb.	.57 @	.61
A-19	lb.	.58 @	.62
A-20	lb.	.64 @	.68
Aero-X	lb.	.75 @	—
Aldehyde ammonia, crystals	lb.	.65 @	.70
Aniline oil, drums, f.o.b. works	lb.	.15 @	.16¼
Crylene	lb.	.55 @	.65
paste	lb.	.45 @	.55
Di-Ortho-Tolylguanidine	lb.	.48 @	.50½
Diphenylguanidine	lb.	.40 @	.42½
Ethylidene aniline	lb.	.45 @	.47½
Formaldehyde Aniline, 140° m. p.	lb.	.33 @	.35½
Formaldehyde Aniline, 60° m. p.	lb.	.31 @	.33½
Grasselerator 102	lb.	.62½@	.67½
Grasselerator 552	lb.	4.45 @	4.60
Grasselerator 808	lb.	1.00 @	1.10
Grasselerator 833	lb.	1.40 @	1.55
Heptene	lb.	.45 @	.55
Hexamethylene-tetramine	lb.	.57½@	.60
Lithex	lb.	.18 @	.20
Methylenedianilide	lb.	.36 @	.37
Monex	lb.	3.25 @	—
Oynone	lb.	.68 @	.80
Para-Nitrosodimethylaniline, f.o.b. works	lb.	.92 @	.96
Piperidine-Piperidyldithio-Carbamate	lb.	4.45 @	4.60
R & H 40	lb.	.40 @	.42½
R & H 50	lb.	.40 @	.42½
R & H 397	lb.	.75 @	.77½
Safex	lb.	1.20 @	1.25
Tensilac, No. 39	lb.	.50 @	.52½
Tensilac, No. 41	lb.	.50 @	.52½
Thermio F	lb.	.50 @	.55
Thiocarbanilide, drums	lb.	.25½@	.26½
Thionex	lb.	3.25 @	—
Trimene	lb.	.75 @	—
base	lb.	1.20 @	—
Triphenylguanidine	lb.	.65 @	.70
Vulcanex	lb.	.68 @	—
Vulcone	lb.	.68 @	—
Vulcanol	lb.	1.03 @	1.08
Waxene	lb.	.30 @	.32
Z 88	lb.	.65 @	.69
Inorganic			
Lead, sublimed blue	lb.	.08¼@	.08¾
Lead, white	lb.	.10½@	.12½
Litharge, domestic	lb.	.09 @	.09¼
Magnesia, calcined,			
light	per 100 lb.	5.35 @	5.45
heavy	per 100 lb.	3.65 @	3.75

COLORS

Blacks (See Compounding Materials)			
Blues			
Prussian	lb.	.33 @	.35
Ultramarine	lb.	.06 @	.30
Browns			
Sienna, Italian	lb.	.05 @	.12½
Umber, Turkey	lb.	.04½@	.07
Greens			
Chrome, light	lb.	.27 @	.31
medium	lb.	.29 @	.32
dark	lb.	.31 @	.34
Chromium Oxide, bbl.	lb.	.34 @	.36
Reds			
Antimony			
crimson, 15/17	lb.	.44 @	.50
sulphur free	lb.	.50 @	.55
golden 15/17 F.S.	lb.	.18 @	.22
Indian English	lb.	.08 @	.12
Domestic (Maroon)	lb.	.08 @	.12
Oximony	lb.	.13¼@	—
Red oxide, pure	lb.	.10 @	.12
Venetian red	lb.	.03 @	.06
Vermillion, quicksilver,			
English	lb.	1.85 @	1.95
Whites			
Lithophone, Akcolith	lb.	.05 3/5@	.06
Lithophone, Azolith	lb.	.05¾@	.05¾
Lithopone, Vanolith	lb.	.05¾@	—
Titanox	lb.	.10 @	.10½
Cal. Base Pigment	lb.	.10 @	.10½
Zinc Oxide—American Process			
American Azo:			
ZZZ (lead free)	lb.	.06½@	.07
ZZ (leaded)	lb.	.06⅝@	.07⅛
Zinc Oxide—French Process			
White seal	lb.	.11⅞@	—
Green seal	lb.	.10⅞@	—
Red Seal		.09⅞@	—
Yellows			
Chrome	lb.	.15½@	.16½
Ocher, French medium	lb.	.03½@	.06
domestic	lb.	.01⅝@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85 @	24.50
Ammonia carbonate	lb.	.10½@	.12
Asbestine	ton	14.75 @	18.00
Barium carbonate	lb.	.03½@	.05
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	12.00 @	18.00
Western prime white	ton	22.00 @	—
imported	ton	27.00 @	36.00
Basofor	lb.	.04½@	—
Blacks			
Arrow "Aerfloted"	lb.	.08 @	.12
Bone Black	lb.	.05½@	.11
Carbon, compressed	lb.	.07½@	.11½
Carbon, uncompressed	lb.	.07 @	.11
Drop Black	lb.	.06 @	.10
Gastex	lb.	.05¼@	.05½
Lamp Black	lb.	.12 @	.40
Micronex	lb.	.08 @	.12
Velvetex carbon	lb.	.04 @	.07
Blanc fixe dry f.o.b. works	lb.	.03½@	.03⅝
Carrara filler	lb.	.01⅝@	.02
Catalpo (fact.)	lb.	.02 @	—
Chalk	ton	12.00 @	14.00
Clay, China, domestic	ton	8.00 @	9.00
Aerfloted Suprex	ton	9.00 @	20.00
Congaree, c. l. f.o.b. mine	ton	9.00 @	—
Mineral Flour, c. l. fob mine	ton	20.00 @	23.00
Tensulite		15.00 @	—
Glues, extra white	lb.	.22 @	.26
medium white	lb.	.20 @	.24
Magnesia, carbonate	lb.	.08½@	.11
Mica, powdered	ton	65.00 @	80.00
Rotten Stone (powdered)	lb.	.02½@	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.30 @	3.70
Talc, domestic	ton	12.00 @	15.00
Velvetex	lb.	.04 @	.07
Whiting, commercial	cwt.	.85 @	1.00
English cliffstone	cwt.	1.50 @	—
Superfine	ton	10.00 @	12.00
Witco	ton	12.00 @	—
Wood pulp XXX	ton	45.00 @	—
Wood pulp X	ton	25.00 @	—
Zinc Carbonate	lb.	.09½@	.10½
Zinc Stearate	lb.	.18½@	.19½

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Montezuma, solid	ton	28.00 @	36.00
Montezuma, granulated	ton	32.00 @	42.00
Paradura	ton	62.50 @	65.00
Pioneer, MR, solid	ton	42.00 @	45.00
Pioneer-granulated	ton	52.00 @	55.00
Robertson, MR, solid	ton	34.00 @	80.00
M.R. (gran)	ton	38.00 @	80.00

SOFTENERS

Acids			
Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulphuric, 60 degrees	ton	10.50 @	11.50
66 degrees	ton	15.00 @	16.00
Tartaric, crystals	lb.	.35 @	.36
Acids, Fatty			
Stearex	lb.	.10 @	.14
Stearic, double pressed	lb.	.11½@	.12½
Alkalies			
Caustic soda, 76%	cwt.	3.76 @	3.91
Soda ash, 58% C.L.	cwt.	1.40 @	
Oils			
Corn, refined, bbls.	lb.	.11 @	.11½
Cottonseed, crude		.08½@	.08¾
Cycline	gal.	.27 @	.34
Degras (c.l. 100 bbls.)	lb.	.03¾@	—
Less c. l. (10-25 bbls.)	lb.	.04 @	—
Lots less than 10 bbls.	lb.	.04¼@	.04½
Fluxrite	lb.	.05 @	.06
Hexalin	lb.	.60 @	—
Acetate	lb.	.70 @	—
Linseed, Raw C.L. bbl.	lb.	.09½@	.10
Palm Lagos	lb.	.07¼@	.07½
Niger	lb.	.07¾@	.08
Vansulol	lb.	.10½@	—
Para-Flux	gal.	.17 @	—
Peanut, domestic, crude	lb.	.12 @	.12¼
Petrolatum, white	lb.	.08½@	.09
dark amber	lb.	.03⅝@	.03½
Pine, steam distilled	lb.	.70 @	
Rapeseed, refined	gal.	1.04 @	1.06
Rosin, grade K, 280 lb.	bbl.	9.65 @	—
second rectified	gal.	.58 @	—
Resins and Pitches			
Pitch, Burgundy	lb.	.06½@	.07½
coal tar	gal.	.05½@	.06
pine, 200 lb. gr. wt.	bbl.	9.00 @	10.00
Rosin, grade K, 280 lb.	bbl.	9.65 @	—
Pigmentar	gal.	.33 @	.41
Tar Retort, 50 gal.	bbl.	12.50 @	13.00
Solvents			
Acetone, pure	lb.	.13 @	
Alcohol denatured,			
No. 1 bbls.	gal.	.37½@	.44½
Benzol, 90%	gal.	.28 @	—
Carbon bisulphide	lb.	.05½@	.06¼
Carbon tetrachloride	lb.	.06¼@	.07
Motor gasoline,			
steel bbls.	gal.	.17 @	—
Naptha, solvent	gal.	.35 @	.40
Turpentine, spirits	gal.	.60 @	.64
wood	gal.	.50 @	.54
Waxes			
Beeswax	lb.	.56 @	.58
Carnauba	lb.	@	.50
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.07 @	.07½
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Miscellaneous			
RSL Mold Solution	gal.	.75 @	.100

ANTI-OXIDANTS

Antox	lb.	.79 @	.83
Neozone	lb.	.74 @	—
Oxynone	lb.	.68 @	.80
Resistox	lb.	.54 @	.57
Stabilite	lb.	.65 @	—
VGB	lb.	.55 @	.66

SUBSTITUTES

Black	lb.	.08 @	.14
White	lb.	.10 @	.16
Brown	lb.	.08 @	.15

VULCANIZING INGREDIENTS

Sulphur Chloride (drums)	lb.	.03¼@	.03½
Sulphur flour,			
Superfine bags	cwt.	2.20 @	2.80
Superfine, bbls.	cwt.	2.55 @	3.10
100% pure, refined,			
bags	cwt.	2.60 @	3.15
bbls.	cwt.	2.95 @	3.50

TIRES & TUBES
CRUDE RUBBER

STATISTICAL SECTION

AUTOMOBILES
GASOLINE

THE outstanding point to be noted in the current rubber statistics is the drop in visible supplies as a result of the decline in London stocks and the reported high consumption figure for June, which is said to be a record. Net imports showed a decided drop in May and will contribute to pull the total of stocks on hand in the United States still further down. On the other hand the amount of rubber afloat and invoiced to the United States continues high and may counterbalance some of the decline in stocks on hand.

This improvement in the statistical position of crude rubber has not been reflected in the market prices, however, and both New York and London have exhibited a steady tone, with spot fairly well stabilized for the time being at around 19 cents. Trading has been comparatively light. No sharp change in market levels is expected, as any bullish trend is apparently checked by fear of what will be the situation after November 1, and any bearish movement will bring sufficient demand from factories to pull the levels back again.

Stocks in London have reached the lowest in several years and now barely represent one month's requirements. Tire and tubes production figures are expected to establish a record for May and the total figures covering May automobile output also set a new record peak.

Latest figures covering imports and exports in the leading consuming and producing markets have been added to the appropriate tables in this section.

PLAN OF THE SECTION

The statistics included in this section have been chosen for their constant importance to the rubber industry. The tables are reprinted in the same relative position in every issue, each table being kept current by the addition of new figures as soon as they become available. The section accordingly affords the most up-to-date, complete and convenient statistical service in the industry.

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U. S. Imports and Exports of Crude Rubber

	Gross Imports			Re-exports			Net Imports
YEARS	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926	413,338	505,817,807	54.63	17,671	22,470,583	56.77	395,667
1927	426,258	339,874,774	35.60	27,775	24,735,488	39.76	398,483
1926:							
Jan.	42,404	72,528,151	76.36	2,059	3,747,505	81.24	40,345
Feb.	32,865	58,733,370	79.78	1,430	2,280,168	71.17	31,435
Mar.	42,152	70,589,581	74.76	1,836	2,735,234	66.51	40,316
Apr.	34,544	48,742,539	62.99	1,128	1,605,093	63.58	33,416
May	29,756	36,896,080	55.35	1,052	1,558,987	66.17	28,704
June	24,900	34,498,561	61.85	1,105	1,371,217	55.41	23,795
July	35,820	33,061,281	41.20	1,554	1,743,854	50.09	34,266
Aug.	27,400	24,670,752	40.21	1,318	1,339,563	45.38	26,082
Sept.	37,112	32,625,032	39.25	1,437	1,519,870	47.20	35,675
Oct.	29,746	25,320,558	38.49	1,366	1,316,270	43.03	28,110
Nov.	39,155	34,890,536	39.78	1,482	1,411,517	42.51	37,673
Dec.	37,754	33,261,366	39.33	1,904	1,841,305	43.16	35,850
1927:							
Jan.	43,340	36,753,719	37.86	1,525	1,444,734	42.28	41,815
Feb.	28,337	23,110,257	36.41	2,451	2,277,297	41.47	25,886
Mar.	35,515	28,693,016	36.07	2,763	3,249,665	52.50	32,752
Apr.	46,202	37,321,505	36.06	1,575	1,428,425	40.48	44,627
May	36,518	30,984,377	37.88	2,782	2,501,562	40.14	33,736
June	33,045	27,850,014	37.62	1,775	1,550,592	39.00	31,270
July	37,677	31,678,259	37.53	1,958	1,560,853	35.59	35,719
Aug.	32,810	26,396,931	35.92	1,809	1,382,768	34.12	31,001
Sept.	33,301	25,314,412	33.94	3,500	3,036,929	38.74	29,801
Oct.	30,184	22,163,282	32.78	2,513	2,042,713	36.29	27,671
Nov.	38,592	27,395,428	31.69	2,469	2,014,196	36.43	36,123
Dec.	30,737	22,213,574	32.26	2,655	2,245,754	37.77	28,082
1928:							
Jan.	39,108	30,278,444	34.56	1,988	1,734,990	38.95	37,120
Feb.	33,664	27,763,655	36.82	2,738	2,229,589	36.35	30,926
Mar.	40,688	32,109,376	35.23	3,718	2,587,434	31.07	36,950
Apr.	37,958	27,296,346	32.23	2,272	1,415,024	27.80	35,686
May	31,058	19,058,672	27.80	2,399	1,386,307	25.80	28,659
June							
July							
Aug.							
Sept.							
Oct.							
Nov.							
Dec.							

U. S. Consumption of Crude Rubber

(Rubber Association of America statistics raised to 100 per cent—All figures in long tons)

Figures on Monthly Basis

	1921	1922	1923	1924	1925	1926	1927	1928
Jan.	5,045	16,938	30,106	29,058	29,638	32,196	31,518	34,403
Feb.	5,955	14,767	30,149	25,736	29,761	31,136	30,137	33,702
Mar.	9,190	21,408	36,629	28,385	33,498	32,936	36,141	35,688
Apr.	13,084	19,294	29,085	27,129	34,139	32,696	35,871	32,772
May	16,023	23,246	36,155	25,845	35,322	29,364	34,592	37,333
June	16,142	31,713	24,272	22,753	35,822	28,598	33,801	
July	18,310	24,522	17,685	23,396	36,053	27,577	29,219	
Aug.	23,649	29,361	20,359	28,982	35,909	34,533	33,460	
Sept.	16,705	24,410	17,594	31,497	31,691	32,904	27,214	
Oct.	16,814	26,881	21,321	31,520	29,047	29,836	26,790	
Nov.	14,105	24,950	20,437	27,289	28,853	28,080	26,792	
Dec.	15,482	25,070	21,902	27,199	28,748	26,293	25,492	
Totals	170,504	282,560	305,694	328,769	388,481	366,149	371,027	

Figures on Quarterly Basis

Quarter	1921	1922	1923	1924	1925	1926	1927	1928
Jan./Mar.			96,776	87,609	95,263	94,301	99,216	103,558
Apr./June	65,463	127,360	89,493	75,674	104,099	87,109	103,242	
July/Sept.			55,621	83,813	99,493	93,793	89,210	
Oct./Dec.	105,962	155,067	63,617	92,656	85,789	83,212	80,860	
Totals	171,425	282,427	305,507	339,752	384,644	358,415	372,528	103,558

Note—The Rubber Association estimates its monthly rubber consumption figures to be 90 per cent complete. Up until 1925 the quarterly figures were likewise estimated to be 90 per cent complete; beginning with 1925 an estimate of 92 per cent completeness has been used. These estimates have been used in raising the figures in this table to 100 per cent. The quarterly figures are generally regarded as the most authentic; the monthly figures may be accepted as preliminary.

Rubber Invoiced to the U. S.

(Reported by American Consuls—Quantities in Long Tons)

During the Week Ended	From Br. Malaya	From Ceylon	From Dutch East Indies	From London & Liverpool	Total
April 28	2,498	484	895	739	4,616
May 5	4,220	652	1,464	1,177	7,513
May 12	2,797	331	1,374	785	5,287
May 19	3,210	429	1,334	723	5,696
May 26	4,404	435	1,409	2,921	9,169
June 2	3,799	1,020	1,306	1,094	7,219
June 9	4,629	209	1,373	490	6,701
June 16	3,335	326	1,652	1,020	6,333
June 23	3,787	266	1,708	2,270	8,031
June 30	4,797	1,094	1,670	821	8,382

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave.
1925																																
October	91¼	91¼	92	—	94½	97	97½	99	99¼	101	—	—	97¾	95½	—	99¼	99	—	99	101¼	102	99¼	99¼	99¼	—	98	99½	99¾	101½	99¼	100¼	98
November	—	99¾	—	98¾	98¾	100	100¾	—	98¾	99½	100½	101⅝	104½	105½	—	—	—	—	109⅝	110¾	110½	—	119½	109	106¼	—	105¾	108¾	—	107	—	104¾
December	106¾	105½	107¾	107¾	107¾	108¼	—	108	109	109¾	106	105½	105½	—	101	99¼	90¾	93	88¼	86⅝	—	88¼	90¾	88¾	88⅝	—	—	91	93	91¼	91¼	98½
1926																																
January	—	—	87	87¼	85¼	86½	87½	—	88½	88¼	88¼	85½	84½	82½	—	—	75½	75½	75	72	72½	72½	—	68	66½	67	69¼	70½	69	—	—	79½
February	67	67½	66¼	66¾	68	69	—	—	67	66	63	—	60½	60½	—	60	60	—	69	60	61	56	55	52	51¾	51	51	—	—	—	—	62¾
March	55	58	58	53½	53½	57½	56	56	55½	61	60	63	61½	60½	62	60½	61	61	61	61½	61	61½	61	60	59⅝	60	60	48	58½	58	59
April	59	—	59	59	59	58	56½	56½	53	53	—	51½	50⅝	49¼	47¾	47¾	47	47	49	—	—	49	48	48	48	48	48	48	49	48½	—	61¼
May	48½	—	50	50¼	49¼	49¾	49¼	—	—	49	49½	48½	47¾	47¾	47½	47½	47	47½	47¼	47¼	48	46¾	46	45	45	45	46	43	—	—	47¾
June	41½	—	41½	42	42	—	41½	41½	42	43	43	43½	43	43	43	43	43	43	44	44	43½	43	43	43	43	42	42	42	42	42	—	42½
July	42	—	42	42	42	42	—	41½	41½	41½	41½	41½	41	40	40	40	40	38	40	40	41½	41	41½	41½	41½	39	41½	41	41	39¾	39	41¾
August	—	38¾	38½	38¾	38¾	38¼	37	37	38¼	38¼	37½	37½	37½	38½	38½	38½	37½	39	39	39	39½	39	39½	39	39	39	39	39½	41	39¾	40	38½
September	40¼	40¼	40¼	—	—	40¼	40¼	40¼	40¼	40¼	—	—	40¼	40¼	40¼	40¼	40½	39	—	41	42¼	42¼	42½	42½	42¼	42¼	42¾	42½	42½	42½	—	41
October	43	43	—	43¼	—	42¾	42½	42½	42¾	42½	42½	42½	42½	42¾	42⅝	43	43⅜	42	42½	42⅝	42⅝	42⅝	42⅝	42⅝	42½	42½	42½	42½	42½	—	—	42½
November	41¼	—	41	41¼	41¼	41½	—	41¼	41¼	41¼	42¾	41¾	41¼	41¼	41¼	41¼	40⅝	40⅝	39	38¾	38¾	38	38	38	38	38	37¾	37	37	38¾	—	38¾
December	36¾	—	37½	37½	37½	—	37	37	37	37	37½	—	37½	37¾	37¾	37½	37¾	38	38	—	38¼	38½	38¾	38¾	39	—	39	39	38½	—	—	—
1927																																
January	—	—	38½	39	39¼	39¾	40¾	40¼	—	40¼	40¾	40⅜	40¾	40¾	40¾	40¾	40¾	40	39¾	39¾	38¾	38¾	38¾	—	38¾	38¾	38¾	38¾	38	38	38	38¾
February	—	37¾	37¾	37½	37½	—	37⅝	37⅝	—	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	37⅝	38	38	38¾	38¾	38¾	38½	39	39	39	39	39½	39½	39½	39½	38¾
March	39¾	39¾	40	40¼	41	40¾	40¾	40⅞	40⅞	40⅞	40⅞	41⅛	41⅛	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41½	41½	41½	41½	41¼	41¼	41	41	41	41¼	41¼	41
April	41¾	41¾	41¾	41¾	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	41¼	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40½	40½	—	40¾
May	—	40⅞	40⅞	40½	40¼	40¼	40¼	40¼	—	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼
June	40⅝	40¼	40¼	—	39½	39½	39¾	38¾	38¾	38¾	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞	37⅞
July	35½	—	—	35¼	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾	34¾
August	35½	35½	35¼	35¾	—	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½
Sept.	34	33¾	33¾	—	33¼	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜
Oct.	33⅝	—	—	33¼	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜	33⅜
Nov.	35	35¼	35¾	36¼	36¾	—	—	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾
Dec.	40½	40¼	40¾	—	40¾	—	40½	40	—	37	40½	40½	—	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼	40¼
1928																																
January	—	37½	37¾	37¾	37¾	41¼	41¼	41	41	41	41	41	41	41	41	41	41	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾
February	—	37¾	37⅝	37⅝	37⅝	37⅝	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾
March	29	28⅝	28⅝	27½	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼	27¼
April	—	17½	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾
May	—	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾	19¾
June	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
July	—	18⅝	—	—	19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1921

Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23	1921	16.36

Average Monthly Price per Pound Since 1922

Months	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents	1927 Cents	1928 Cents
Jan.	18.82	32.73	25.86	36.71	79.50	38.75	40.25
Feb.	16.12	35.14	25.29	36.01	62.25	38.25	32.75
Mar.	14.53	34.21	22.83	41.00	59.00	41.04	26.82
Apr.	15.99	32.48	22.51	43.64	51.25	40.86	18.97
May	15.25	27.39	18.89	58.47	47.75	40.76	18.99
June	15.11	26.88	18.81	77.26	42.50	37.25	19.59
July	14.67	26.10	22.16	103.16	41.03	34.44	
Aug.	13.93	28.84	26.17	82.99	38.50	35.12	
Sept.	14.44	28.95	27.56	88.88	41.00	33.67	
Oct.	19.78	26.93	31.13	98.01	42.50	34.32	
Nov.	23.88	27.14	34.33	104.80	38.50	37.58	
Dec.	27.42	26.60	37.88	98.51	38.25	40.63	
Average for Year	17.50	29.45	26.20	72.46	48.50	37.72	

London Closing Prices of Ribbed Smoked Sheet

(In Pence Per Pound)

Sixth Restriction Year—Third Quarter

Day	May	June	July	Day	May	June	July
1	8¼	9⅜	—	17	8⅝	—	
2	8⅜	9⅜	9¼	18	8⅝	9¼	
3	8⅝	—	9⅛				
4	8¾	9⅛	9⅛	19	8⅝	9⅜	
5	8¾	9⅛	9⅛	20	—	9½	
6	—	9¼		21	8¾	9½	
7	8¾	9⅜		22	8¾	9⅜	
8	8¾	9⅛		23	8⅞	9⅜	
9	9⅛	9¼		24	9⅛	—	
10	8¾	—		25	9⅛	9⅜	
11	8⅞	9⅛		26	—	9⅜	
12	8⅞	9¼		27	—	9⅜	
13	—	9¼		28	—	9⅜	
14	8¾	9⅜		29	9½	9¼	
15	8⅞	9⅜		30	9½	9⅛	
16	8¾	9⅜		31	9½	—	

(The average price for the period for which daily prices are reported above is approximately 9.150 pence. The British Colonial Secretary has announced that only 60% of the standard production will be exportable from the restricted area during the next quarter if the price during the entire current quarter does not average at least 21 pence.)

Average Price in Previous Quarters

Quarter	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28
Nov.-Jan.	14.285	14.175	17.9983	46.709	19.265	19.023
Feb.-Apr.	16.858	12.917	19.356	28.103	19.696	12.591
May-July	14.242	10.947	38.469	21.001	18.165	
Aug.-Oct.	14.944	14.632	43.269	20.199	16.620	

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Day of Month	June	July	Day of Month	June	July	Day of Month	June	July
1	21.05	——	11	20.95		21*	21.65	
2	21.05	22.80	12	20.65		22	21.80	
3	——	22.35	13	20.90		23	22.25	
4	21.35	——	14	21.00		24	——	
5	21.15	22.75	15	21.15		25	22.05	
6	20.85		16	21.00		26	22.50	
7	21.00		17	——		27	21.65	
8	21.05		18	21.25		28	23.00	
9	21.10		19	21.25		29	22.80	
10	——		20	21.50		30	23.10	
						31		

Average Monthly Price Per Pound

Month	1926 Cents	1927 Cents	1928 Cents	Month	1926 Cents	1927 Cents	1928 Cents
Jan.	20.85	13.42	19.12	Aug.	18.57	20.04	
Feb.	20.60	14.10	18.40	Sept.	17.02	21.95	
Mar.	19.35	14.32	19.38	Oct.	13.14	20.55	
Apr.	19.13	14.75	20.63	Nov.	12.86	20.22	
May	18.92	16.07	21.58	Dec.	12.68	19.58	
June	18.57	16.85	21.50	Average for Year	17.53	17.49	
July	18.71	18.00					

Stock of Crude Rubber in the U. S.

(All Quantities in Long Tons)

At End of	ON HAND 1926	ON HAND 1927	ON HAND 1928	AFLOAT 1926	AFLOAT 1927	AFLOAT 1928	ON HAND AND AFLOAT 1926	ON HAND AND AFLOAT 1927	ON HAND AND AFLOAT 1928
Jan.	55,198	76,172	110,244	46,296	45,312	41,256	100,434	121,484	151,500
Feb.	58,035	91,186	108,955	46,935	42,166	43,316	104,970	133,352	152,271
March	61,822	85,740	114,061	43,567	49,600	39,324	105,389	135,340	153,385
April	55,261	92,757	113,083	41,905	38,963	33,986	97,166	131,720	147,069
May	64,360	94,563	105,356	40,303	44,181	34,374	104,663	138,744	139,730
June	60,460	89,250		40,907	47,233		101,367	136,483	
July	64,900	98,469		38,062	40,587		102,962	139,056	
Aug.	60,870	96,148		37,360	40,937		98,230	137,085	
Sept.	62,078	97,829		42,464	37,966		105,542	135,795	
Oct.	64,089	97,452		52,930	42,804		117,919	140,256	
Nov.	69,385	101,034		47,311	37,076		116,696	138,110	
Dec.	72,520	100,130		52,020	47,938		124,540	148,068	

(Rubber Association of America figures raised to 100%.)

Stock of Crude Rubber in London

(No. of tons in Wharves and Warehouses, including Latex)

At end of:	1920	1921	1922	1923	1924	1925	1926	1927	1928
Jan.	19,300	56,573	67,252	73,498	57,460	27,172	9,994	54,994	66,524
Feb.	18,329	59,439	67,623	70,483	56,732	23,425	10,004	58,826	62,964
Mar.	18,969	63,913	66,670	63,438	55,647	18,104	13,127	63,055	58,272
Apr.	20,072	68,759	68,637	58,770	54,559	12,949	18,773	66,897	53,425
May	20,921	70,403	70,146	54,439	51,615	5,895	20,384	67,169	
June	22,517	69,408	71,597	51,050	51,115	5,318	23,984	63,902	
July	25,346	71,065	71,515	49,937	52,073	4,258	27,727	63,717	
Aug.	30,674	73,211	72,112	58,427	49,700	4,619	30,165	64,491	
Sept.	35,504	72,175	70,977	54,523	44,011	5,453	35,077	68,236	
Oct.	41,743	69,229	68,536	58,891	37,523	5,086	42,138	69,569	
Nov.	45,550	70,786	68,548	60,074	33,593	3,869	44,057	67,050	
Dec.	50,652	69,792	72,299	60,246	29,488	5,697	48,918	63,793	

At End of Recent Weeks

	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
1927					
July	63,917	64,163	63,511	62,819	63,626
August	64,177	64,557	64,842	64,259	
September	65,162	66,148	66,664	67,253	
October	68,519	70,167	70,916	70,060	69,551
November	69,660	69,501	69,850	67,318	
December	65,869	66,011	64,761	63,397	63,207
1928					
January	64,360	65,524	65,450	66,285	
February	65,909	64,945	63,769	63,103	
March	61,978	61,920	61,033	59,644	58,197
April	58,732	58,945	56,819	53,360	
May	52,015	50,837	48,705	44,628	
June	43,716	42,683	41,185	40,083	38,611

Rubber in Singapore and Penang

(Stocks held by Dealers—Quantities in Long Tons)

End of	1926	1927	1928	End of	1926	1927	1928
Jan.	16,726	25,440	25,868	July	23,101	22,558	
Feb.	13,653	26,766	22,867	Aug.	23,362	25,764	
Mar.	18,389	27,844	20,538	Sept.	25,997	25,178	
Apr.	16,328	24,543	16,946	Oct.	26,614	25,790	
May	16,967	25,133	17,437	Nov.	25,486	28,369	
June	19,416	21,898		Dec.	26,443	25,798	

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total	Per Cent Balloons		Total	Per Cent Balloons
1922	16,297,735	0.0	1925	26,001,664	66.8
1923	23,140,620	0.6	1926	24,199,524	78.8
1924	21,863,311	19.7	1927	19,700,003	79.1
1927			1928		
July	1,679,587	84.4	January	1,811,534	87.8
August	1,825,905	80.2	February	1,806,437	86.5
September	1,727,122	77.7	March	2,420,084	86.4
October	1,354,924	81.4	April	2,316,324	88.4
November	838,591	67.8	May	2,185,592	84.0
December	1,134,421	80.0	June		

U. S. Consumption of Gasoline

(In Barrels of 42 Gallons)

MONTHS	1924	1925	1926	1927	1928
January	11,918,000	14,386,000	17,582,000	17,888,000	20,939,000
February	9,626,000	13,210,000	15,814,000	18,240,000	21,136,000
March	10,961,000	14,890,000	19,302,000	22,464,000	24,041,000
April	14,583,000	19,013,000	20,848,000	23,371,000	25,712,000
May	15,889,000	20,459,000	24,213,000	26,579,000	27,355,000
June	16,421,000	20,724,000	23,803,000	27,799,000	
July	18,610,000	22,879,000	24,752,000	29,784,000	
August	19,825,000	22,323,000	26,912,000	29,779,000	
September	16,871,000	20,177,000	22,929,000	28,409,000	
October	18,029,000	19,826,000	23,973,000	25,497,000	
November	16,607,000	18,024,000	20,618,000	24,400,000	
December	15,663,000	17,954,000	21,419,000	23,718,000	
TOTAL	185,003,000	223,865,000	262,165,000	297,928,000	

U. S. Tire and Tube Statistics

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1922	1923	1924	1925	1926	1927
Production	40,932	45,259	51,633	60,845	61,237	64,439
Shipments	39,987	45,204	50,120	59,262	59,002	64,059
Inventory[2]	6,132	5,772	7,427	8,142	10,456	10,264

Figures for Recent Months

	PRODUCTION 1926	1927	1928	SHIPMENTS 1926	1927	1928	INVENTORY 1926	1927	1928
Jan.	4,587	4,965	5,491	2,974	4,932	5,394	9,947	10,432	9,949
Feb.	4,865	5,095	6,363	3,436	4,458	5,031	11,164	11,075	11,721
Mar.	5,456	6,276	6,819	4,561	5,701	5,731	12,004	11,583	12,389
Apr.	5,346	6,299	6,178	4,980	5,701	5,812	12,461	12,122	12,717
May	5,023	6,151		5,211	5,657		12,343	12,462	
June	5,422	6,202		5,724	6,253		11,968	12,462	
July	4,950	5,087		6,337	5,973		10,592	11,326	
Aug.	5,872	5,752		6,744	6,393		9,732	10,721	
Sept.	5,706	4,822		6,040	5,717		9,318	9,722	
Oct.	5,103	4,773		4,544	4,799		9,917	9,665	
Nov.	4,324	4,502		3,733	4,306		10,297	10,136	
Dec.	4,683	4,497		4,718	4,165		10,456	10,264	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1922	1923	1924	1925	1926	1927
Production	50,850	60,116	70,706	82,614	76,618	70,823
Shipments	49,673	59,072	68,016	81,004	71,591	72,896
Inventory[2]	7,643	8,425	11,052	11,313	16,200	13,692

Figures for Recent Months

	PRODUCTION 1926	1927	1928	SHIPMENTS 1926	1927	1928	INVENTORY 1926	1927	1928
Jan.	6,809	5,337	5,441	3,723	6,016	6,072	14,361	15,585	12,982
Feb.	6,825	5,658	6,895	3,736	5,120	5,431	17,090	16,075	14,650
Mar.	7,030	7,184	6,231	4,987	6,157	5,731	19,131	17,096	15,573
Apr.	6,554	7,373	6,661	5,051	6,359	5,702	20,674	17,801	16,638
May	6,149	6,737		6,304	6,140		21,141	18,389	
June	6,171	6,306		6,898	6,832		20,243	17,858	
July	5,729	5,284		8,569	7,070		17,267	16,004	
Aug.	7,424	6,480		9,579	7,983		15,462	14,664	
Sept.	7,590	5,651		7,762	6,758		15,312	13,511	
Oct.	6,208	5,065		5,474	5,024		15,929	13,539	
Nov.	4,852	4,775		4,045	4,723		16,604	13,585	
Dec.	5,277	4,969		5,463	4,712		16,200	13,692	

(1) Rubber Association of America figures, raised to 100%. The Association estimates its figures to be 75% representative or complete when issued and that basis has been accepted when preparing the statistics in this table.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	United States Total	Passenger Cars	Trucks	Canada Total	Passenger Cars	Trucks	Grand Total
1921	1,595,304	1,452,902	142,402	66,246	61,098	5,148	1,661,550
1922	2,547,208	2,302,923	244,285	102,053	94,904	7,149	2,649,261
1923	4,020,255	3,631,728	388,527	146,438	129,228	17,210	4,166,693
1924	3,600,918	3,203,049	397,869	135,246	117,765	17,481	3,736,164
1925	4,265,704	3,760,459	505,245	161,389	139,311	22,078	4,427,093
1926	4,298,799	3,808,753	490,046	205,092	164,483	40,609	4,503,891
1927							
Jan.	238,926	199,650	39,276	15,376	11,745	3,631	254,302
Feb.	304,758	264,171	40,587	18,655	14,826	3,829	323,413
March	394,430	345,911	48,519	23,250	19,723	3,527	417,680
April	404,743	357,009	47,734	24,611	20,890	3,721	429,354
May	404,099	357,148	46,951	25,708	21,991	3,717	429,807
June	321,959	278,728	43,231	19,208	16,470	2,738	341,167
July	268,474	236,866	31,608	10,987	8,719	2,268	279,461
Aug.	308,807	274,378	34,429	12,526	10,139	2,387	321,333
Sept.	260,420	226,440	33,980	11,262	8,681	2,581	271,682
Oct.	219,712	183,041	36,671	7,791	6,236	1,555	227,503
Nov.	134,381	109,742	24,639	6,617	5,173	1,444	140,998
Dec.	133,178	105,784	27,394	3,435	2,277	1,158	136,613
TOTAL	3,393,887	2,938,868	453,019	179,426	146,870	32,556	3,573,313
1928							
Jan.	225,039	199,032	26,007	8,463	6,705	1,758	282,502
Feb.	323,368	290,830	32,358	12,504	10,315	2,189	335,872
March	412,825	371,408	41,417	9,724	7,478	2,246	422,549
April	409,948	364,877	45,071	24,240	20,546	3,694	434,188
May	425,990	375,798	50,192	33,942	29,764	4,178	459,932
June							
July							
Aug.							
Sept.							
Oct.							
Nov.							
Dec.							

Exports of Crude Rubber from Principal Producing Countries

(*Long Tons*)

	BRITISH MALAYA[1]							DUTCH EAST INDIES[2]						
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon[3]	India & Burma[3]	Sarawak[4]	British North Borneo[3]	Siam[4]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China[3]	Amazon Valley	All Other[5]	World Total[7]
1923	252,016	70,432	181,584	39,971	6,416	5,705	4,237	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,955
1924	259,706	108,524	151,182	39,997	7,697	6,699	4,621	2,962	42,446	54,497	80,347	6,688	23,165	9,065	429,366
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	5,377	46,757	65,499	120,626	7,881	25,298	13,797	517,523
1926	391,328	151,243	240,085	58,962	9,874	9,155	6,079	4,027	52,186	71,413	121,231	8,203	24,298	16,017	621,530
1927	371,322	182,845	188,477	55,356	11,321	10,923	6,582	5,472	55,297	77,815	142,171	8,645	28,782	15,633	606,474
1926:															
Jan.	30,452	10,237	20,215	4,246	1,273	416	472	289	4,110	6,239	8,165	866	1,284	1,805	49,380
Feb.	30,440	8,306	22,134	5,120	725	488	450	253	4,524	5,717	6,854	554	2,759	1,978	51,556
Mar.	35,012	14,800	20,212	5,177	1,113	792	561	418	4,527	5,566	11,984	573	2,126	1,899	54,948
Apr.	23,727	10,565	13,162	3,766	590	679	374	293	4,226	4,598	6,285	410	2,318	1,529	38,230
May	31,231	10,604	20,627	3,944	691	927	410	279	4,440	5,358	8,737	502	1,353	1,464	48,732
June	30,624	11,764	18,860	4,208	452	779	512	275	4,444	6,125	10,614	549	1,213	1,279	49,310
July	28,824	15,280	13,544	4,422	938	911	498	439	4,618	5,612	13,112	1,521	1,565	1,148	48,328
Aug.	34,625	13,595	21,030	5,666	521	890	476	316	4,132	5,699	10,390	378	1,888	1,097	52,483
Sept.	35,913	13,972	21,941	6,015	651	888	689	457	4,065	6,568	11,391	681	2,156	822	56,324
Oct.	39,367	15,203	24,164	5,672	634	805	473	385	4,058	6,998	11,491	661	1,904	1,023	58,268
Nov.	34,302	12,201	22,101	4,228	1,110	685	547	285	3,988	5,816	9,422	718	1,911	1,259	52,070
Dec.	36,811	14,716	22,095	6,498	1,176	895	617	338	5,054	7,117	12,786	790	3,821	714	61,901
1927:															
Jan.	34,946	14,995	19,951	6,697	921	959	585	304	4,187	6,706	10,690	941	3,482	981	56,404
Feb.	27,528	11,697	15,831	3,571	1,469	552	445	360	4,078	6,526	10,535	675	2,104	1,098	47,244
Mar.	41,346	17,464	23,882	7,142	1,124	997	639	432	5,657	7,004	12,905	733	3,178	1,791	65,484
Apr.	29,041	13,069	15,972	3,349	723	984	452	526	4,666	5,531	10,197	557	2,451	1,520	46,928
May	31,393	15,491	15,902	3,124	760	786	415	348	5,430	5,529	13,410	586	2,460	1,207	49,957
June	32,607	14,706	17,901	3,348	856	1,100	589	409	4,818	5,518	9,109	772	889	1,731	46,990
July	23,947	12,697	11,250	4,018	827	859	544	333	4,771	6,142	11,566	519	1,757	1,113	43,699
Aug.	30,371	17,105	13,266	5,357	688	1,133	623	546	4,355	6,682	12,440	716	1,928	969	48,703
Sept.	29,835	12,095	17,740	4,911	479	645	566	498	3,635	5,967	9,853	497	2,072	1,213	48,066
Oct.	29,846	15,801	14,045	5,245	802	721	591	542	3,810	7,755	13,633	775	2,752	939	51,520
Nov.	28,277	19,860	8,417	4,464	1,277	1,241	591	600	4,127	6,587	14,395	683	2,369	1,627	46,378
Dec.	32,185	17,865	14,320	4,130	1,395	946	592	664	5,763	7,878	13,438	1,191	3,340	1,444	55,101
1928:															
Jan.	27,731	16,618	11,113	4,352	1,605	842	500*	525	4,851	7,988	11,360	720	2,273	1,025	47,154
Feb.	28,813	12,911	15,902	4,353	1,081	667	500*	536	4,052	6,757	8,635	723	1,612	1,276	46,094*
Mar.	27,813	10,508	17,305	3,460	775	645	500*	269	3,999	5,826	9,690	613	2,750	1,200*	47,032*
Apr.	20,029	9,335	10,694	3,460	789	630	500*	258	3,993	5,040	5,538	518	1,014	1,200*	33,634*

(1) Mayalan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, and 3,263 in 1926. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 18 tons in 1923, 93 tons 1924, 6 tons 1925, and about 20 tons in 1926. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons 1924, 2,239 tons 1925, and about 60 tons in 1926. (6) Calculated from official import statistics of principal consuming countries, viz., United States, United Kingdom, France, Germany, Italy, Belgium and Netherlands. This figure includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. *Figure is provisional; final figure will be shown immediately it becomes available.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(*Long Tons*)

	United States*	United Kingdom	France (h)	Germany	Canada (ac)	Japan (ac)	Italy	Russia (ce)	Australia (ed)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	236,977	42,671	17,685	5,584	6,395	9,753	9,894	75	1,002	3,995	2,771	3,149	2,418	9	342,378
1920	248,762	56,844	13,885	11,890	11,746	5,297	6,123	62	1,815	3,840	5,510	2,292	2,008	567	370,641
1921	179,678	42,087	15,135	21,920	8,124	21,713	3,906	165	1,014	1,705	1,022	1,279	2,245	569	300,562
1922	296,267	11,724	24,352	27,546	9,207	15,934	6,430	2,493	2,643	172	-8,807	1,778	589	567	395,885
1923	300,372	12,700	27,392	18,519	13,277	15,372	8,489	2,986	1,649	2,184	792	2,528	630	1,128	408,018
1924	317,747	-11,550	30,446	22,727	14,299	19,571	8,764	2,346	3,124	2,688	-807	3,178	944	1,370	414,847
1925	381,815	4,061	32,956	33,937	19,683	11,117	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	516,493
1926	395,667	84,865	34,240	22,775	20,229	18,125	9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	613,643
1926:															
January	40,345	6,886	2,832	703	2,188	892	760	332	438	76	163	303	89	134	56,141
February	31,435	3,114	3,063	1,113	1,865	741	1,041	643	512	143	88	397	145	75	44,375
March	40,316	8,907	3,941	1,342	2,079	864	1,037	832	547	129	227	377	109	161	60,868
April	33,416	8,275	4,121	1,781	1,615	1,868	865	402	505	71	93	335	130	193	53,670
May	28,705	6,775	2,519	1,848	1,239	1,010	705	200	468	186	241	225	60	192	44,371
June	23,795	5,894	2,196	1,655	1,188	1,465	1,070	923	636	269	215	303	123	103	39,895
July	34,266	6,768	2,352	2,202	1,552	1,447	800	132	702	295	480	292	121	115	51,524
August	26,081	7,327	2,457	2,110	1,888	1,284	796	655	1,275	303	594	336	90	151	45,347
September	35,675	8,843	1,774	2,029	1,355	1,922	819	472	1,241	283	429	317	91	138	55,388
October	28,110	8,082	3,376	2,423	1,865	2,396	645	585	1,004	301	2	360	100	121	49,370
November	37,673	9,247	2,719	3,007	1,548	3,380	832	568	916	194	-18	358	90	181	60,695
December	35,850	4,749	2,890	2,562	1,847	856	439	725	777	248	156	443	151	306	51,999
1927:															
January	41,815	10,192	3,284	2,481	1,936	1,227	672	803	929	296	192	316	139	100	64,382
February	25,886	7,692	3,263	3,103	2,620	1,902	601	907	460	502	152	336	146	210	47,780
March	32,752	9,049	2,050	3,475	3,760	1,578	852	784	780	454	86	385	137	127	56,269
April	44,627	7,875	2,310	2,393	1,509	2,181	781	1,972	762	448	58	230	177	218	65,541
May	33,736	2,896	2,006	3,380	2,519	1,084	918	887	694	626	-57	335	155	223	49,402
June	31,270	2,282	2,387	3,632	2,086	798	942	1,506	557	583	-17	243	164	183	46,616
July	35,719	1,116	2,384	2,899	2,104	1,505	1,007	415	900	429	66	227	177	236	49,184
August	31,001	3,463	2,795	3,119	2,013	1,970	1,274	386	650	604	-63	312	138	123	47,785
September	29,801	7,800	1,956	2,891	1,850	2,025	684	518	772	552	-33	451	155	272	49,694
October	27,671	5,888	3,479	4,202	1,790	1,966	1,021	1,075	908	465	156	401	153	363	49,538
November	36,123	1,687	3,661	4,209	1,916	1,575	1,167	1,312	836	749	298	474	246	317	54,570
December	28,082	309	4,696	3,108	2,302	2,710	1,462	1,453	1,242	784	-202	514	268	300	47,028
	398,483	60,249	34,271	38,892	26,405	20,521	11,381	12,018	9,490	6,492	636	4,224	2,055	2,672	627,789
1928:															
Jan.	37,120	1,921	1,764	2,485	2,290	1,361	546	572	802	589	52	261	335	376	50,474
Feb.	30,996	3,143	2,596	2,984	2,553	1,258	655	159	616	599	98	307	296	297	46,417
Mar.	26,970	3,179	1,902	3,521	2,989	1,707		1,468		816	95				
April	35,686	2,280		2,719	1,938										

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—United Kingdom exports to Russia, and beginning with October, 1927, exports from the United States to Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. *United States imports of guayule are not included in this compilation; such imports amounted to 4,305 tons in 1926 and to 5,019 tons in 1927.

BOOK REVIEWS

LA LINOXYNE ET LE LINOLEUM—par A. D. Luttringer (Editor-in-Chief of the Review, "LeCaoutchouc et la Gutta-Percha"). One of the volumes of the Encyclopedie du Caoutchouc et des Matieres Plastiques. A. D. Gillard, Editor, 49 Rue des Vinaigriers, Paris. 1928. 169 pp.

This is the fifth volume of the series embracing the "Encyclopedia of Rubber and Plastic Materials," and is prepared by A. D. Luttringer, who by virtue of his long and able connection with one of the leading rubber trade and scientific publications in France, is well qualified for the work. It is the first book in the French language on oxidized linseed oil and linoleum and the subject is treated very comprehensively.

ECONOMIE ET POLITIQUE DU CAOUTCHOUC. Le Plan Stevenson, ses Resultats-Etude des Elements du Marche Futur. By Henry Tard, Doctor of Law. 1928. 200 pp.

The volume constitutes a comprehensive study of the present world rubber situation, with particular emphasis on the situation arising out of the Stevenson restriction scheme. It is in the nature of a criticism of the scheme but at the same time covers other phases of the economics of crude rubber including studies of the production and consumption of rubber throughout the world.

THE INTERNATIONAL CARTEL MOVEMENT. By Louis Domeratzky, Chief, Division of Regional Information. Department of Commerce. Trade Information Bulletin No. 556.

The Department of Commerce has just issued this bulletin covering a significant phase of European economy. It is a concise study of the cartel movement from its inception to its postwar development. Copies may be obtained free upon request to the Department at Washington. The question is of special interest to the rubber industry in view of the rumors from Germany of the formation of a trust by a group of rubber manufacturers.

United States Imports of Guayule Rubber and Related Gums

(All quantities in Long Tons)

	Guayule		Balata		Jelutong		Gutta Percha	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
1919	1,430	760,690	727	937,038	8,332	2,213,964	2,900	1,068,698
1920	758	345,985	1,064	1,260,043	5,672	2,068,501	3,183	1,520,309
1921	58	26,945	814	1,077,859	1,745	351,893	985	333,564
1922	127	57,040	812	978,765	2,335	403,812	818	281,012
1923	1,155	542,227	700	898,524	4,565	853,308	912	375,167
1924	1,356	536,392	464	568,456	6,165	1,237,100	1,408	463,610
1925	3,781	1,803,448	517	574,750	6,749	1,642,531	1,603	629,284
1926	4,305	2,562,096	354	327,213	7,263	3,127,757	1,445	661,156
1927	5,018	2,674,957	582	447,246	7,785	2,448,657	1,494	728,172
1928:								
Jan.	432	242,339	27	24,218	588	183,705	150	86,702
Feb.	489	281,295	33	32,165	403	142,621	312	215,085
Mar.	575	365,927	32	26,460	829	388,616	115	57,833
Apr.	512	312,131	47	32,924	592	174,970	68	27,627

Reclaimed Rubber in the United States

(All Quantities in Long Tons—100% Basis)

Year	Production	Consumption Tons	Consumption % to Crude	Stocks*	Year	Production	Consumption Tons	Consumption % to Crude	Stocks*
1919	81,366	73,535	36.3	.....	1924	80,079	76,072	22.4	.....
1920	86,395	75,297	38.4	.....	1925	132,930	137,105	35.6	13,203
1921	36,725	41,351	24.1	.....	1926	180,582	164,500	45.9	23,218
1922	57,834	54,458	19.3	.....	1927	189,144	178,471	47.6	24,980
1923	74,766	69,534	22.7	.....					
1927:									
Jan.	16,526	12,374	39.3	25,903	July	15,488	13,842	47.4	26,599
Feb.	15,860	14,424	47.8	27,291	Aug.	15,109	15,836	47.3	25,157
Mar.	16,788	13,528	37.4	27,124	Sept.	14,392	14,790	54.3	23,429
Apr.	14,483	16,677	46.5	25,712	Oct.	16,127	17,292	64.5	22,176
May	16,159	15,754	46.1	26,419	Nov.	15,477	14,876	55.5	21,728
June	16,652	15,547	46.0	25,811	Dec.	16,083	13,431	52.7	24,980
1928:									
Jan.	14,862	18,134	52.7	21,941	July				
Feb.	15,291	16,808	49.9	20,848	Aug.				
Mar.	17,069	18,619	52.2	19,558	Sept.				
Apr.	15,393	17,355	52.9	19,283	Oct.				
May					Nov.				
June					Dec.				

*Stocks on hand at the end of month or year. Exports of reclaimed rubber, not shown in this table, amounted to 8,540 tons in 1927.

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